Medical Library

HYGEIA

The HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

ULY 1936 25 CENTS

Cataract

Quacks and Quackery Tomorrow's Drivers

Housewives!

Here's fun and money for you

1 DO THIS..

Go to your grocer and buy two cans of Chicken of the Sea Brand Tuna or White Star Tuna . . . almost every grocer carries one of these quality brands!

2 *Jot down* your grocer's name and address, and the price you paid him for the Tuna.

3 When you get home, take the two labels off the cans . . . and save them (we'll tell you more about this a little later!)

4 Serve the tuna to your family; note the uniform quality... how tasty and delicious . . . how much it tastes like chicken. This tuna is so healthful that it bears the Seal of Acceptance of the American Medical Association.

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

5

NOW . . .
PROFITABLE FUN!

IMAGINE YOURSELF TO BE A FAMOUS CHEF!

Write your opinion of Chicken of the Sea Brand or White Star Tuna

IN TEN WORDS OR LESS.

Mail, with two Tuna labels (or label replicas) and with mention of your grocer's name and address, and the price paid for the Tuna . . . to Contest Department, Van Camp Sea Food Company, Inc., Terminal Island, California.

18,203 PRIZES
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ALL
Winners of Weekly Prizes automatically become exclusive participants for these giant Capital CASH Prizes!

GRAND PRIZE	$2,500.00
2nd Prize . . .	1,000.00
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40 PRIZES, each	25.00
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203 BIG CAPITAL PRIZES!
TOTALLING $10,000.00 IN CASH!
500 WEEKLY QUALIFYING PRIZES
Every week for 36 weeks . . . Consisting of Gifts of One Dozen Cans of either Chicken of the Sea Brand Tuna, or White Star Tuna

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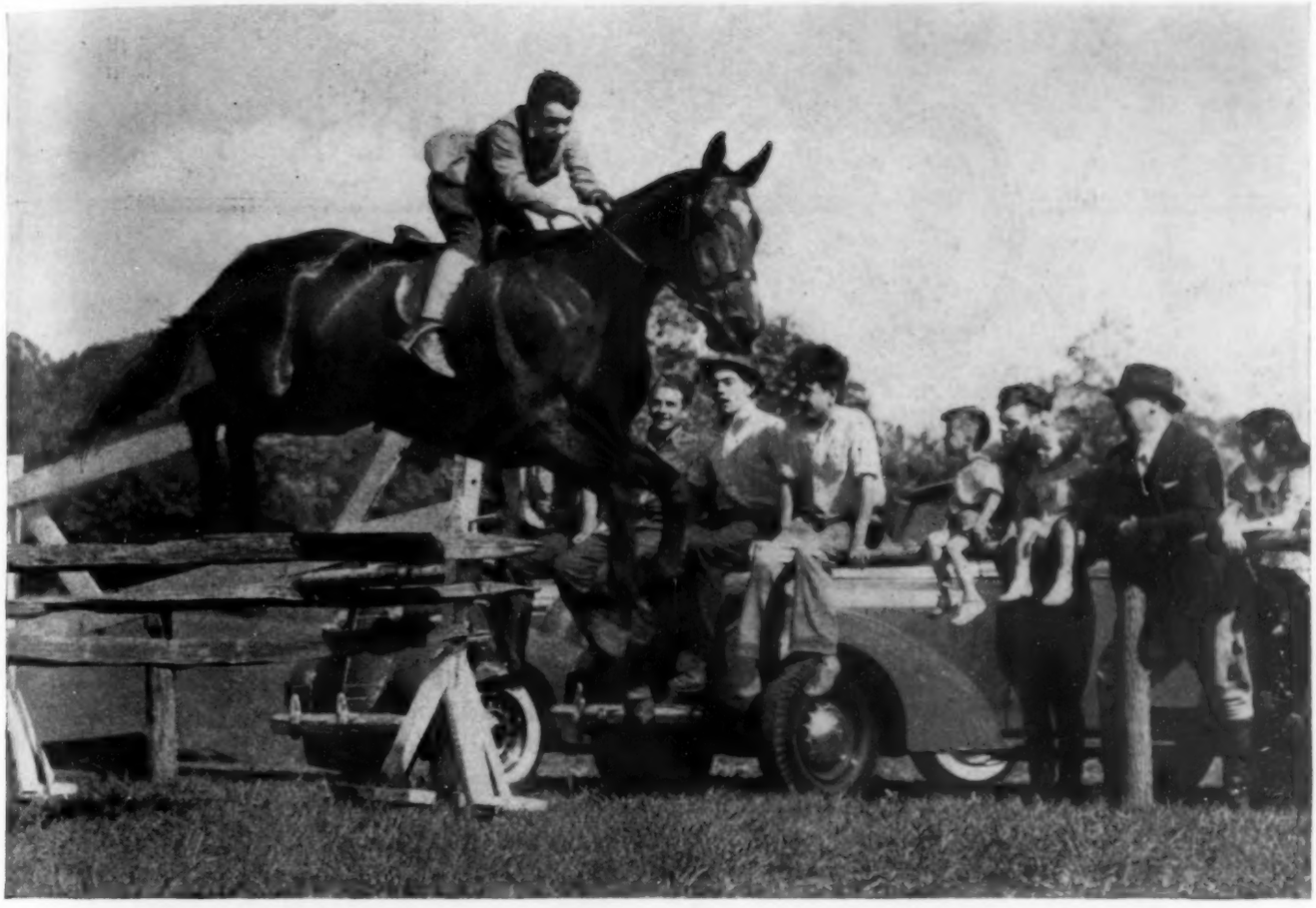


MOTHER, TAKE A BOW!

Mother? Yes, indeed. She may not have taught this sure-seated young horseman to jump, or even to ride . . . But one thing she *did* do! For ten watchful years, she saw to it that her boy had proper exercise, lots of sleep, and an abundance of body-building vitamins and minerals.

Canned foods helped immeasurably. First, the canned strained baby foods doctor recommended. And now, *all* canned foods. For foods that come in cans are sealed-cooked—that is, cooked in the can after it is sealed up. This process conserves vitamins and minerals in high degree.

Minerals, for example, that are soluble in water can be lost in the home method when the cooking water is poured away. But, in canned foods, only a limited amount of water is used, and these minerals are thus retained within the can.

ACCEPTED AMERICAN MEDICAL ASSN

The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Committee on Foods of the American Medical Association.

Home Economics Department

AMERICAN CAN COMPANY

230 Park Avenue, New York

JULY 1936

Noise

THE ANTINOISE CAMPAIGN launched abroad some three or four years ago has now actively engaged the interest of municipal authorities in this country. Commissions and other bodies have been organized in France, England, Germany and Austria which are giving their attention to this problem. It is said that London now possesses the only hotel in Europe which is noise-proof and air conditioned. The hotel has double windows set in heavy steel frames which exclude all noise. The air is brought into this hotel by a ventilating system which insures clean air at a suitable temperature, circulated by forced draft. In Great Britain the most recent step is an attempt to control unnecessary noise from aircraft. The Antinoise League, it is reported, has been in communication with the Air Ministry and the Aeronautical Research Committee in an endeavor to prohibit low flying and particularly airplane noises in the vicinity of hospitals. Moreover, studies are now being made on the application of silencers for the engines of airplanes for short flights. In London it is a misdemeanor to blow a motor horn between 11 at night and 7 in the morning. Special attention is given also to unnecessary noise from radios. Attempts are made to limit the sound to the apartment in which the radio is being played, and the noise from loud speakers used in advertising in shops and on moving vehicles is prohibited.

The effects of continuous noise on the human body and the nervous fatigue induced by excessive noise are difficult to evaluate. Those who live in the cities are saturated with noises that come from street traffic, railways, radios, hucksters and factories. Complaints of noise in New York for the most part concerned automobile traffic and rail transportation. Scientific studies have shown that there are places in New York City where the noise is so great that a Bengal tiger could roar and not be heard at a distance of 20 feet. The effects of noise on health are not easily measurable but are nevertheless quite definitely detrimental. Every one recognizes the relationship of noise to the loss of sleep or to disturbances in sleep.

LORD HORDER, who was recently a guest of the American Medical Association at its Annual Session, points out that nature has arranged to protect us against many of the incidents of life. If light is too sudden or glaring the rapid action of the eyelid saves the delicate curtain of the retina from harm. A crash in our vicinity causes us to shrink back from danger. We do not, however,

EDITORIAL

have any good reflex mechanism to protect the human ear. Probably nature has not had time to accommodate the human machine to the vast industrial devices that we now have. It is known that sudden noise disturbs nerve integrity. Some people are much more sensitive to noise than others. Civilized man is more sensitive to noise than uncivilized man, and the child is less sensitive to noise than the adult. Various noises affect different persons in different ways. A man who may not object to a two hour session with the radio will find the whining of a child or the whimpering of a puppy acutely annoying.

No one with any realization of the significance of noise in our modern civilization is going to recommend that noise be abolished completely, but all who understand the situation must insist that noise be brought under control. The new law adopted in New York City prohibits the sounding of horns or signal devices on vehicles not in motion and, except as danger signals, on vehicles in motion. Playing radios or other musical instruments loudly enough to disturb neighbors between 11 p. m. and 7 a. m. is specifically forbidden, as is the keeping of noisy animals and birds. Building or demolition of buildings may not be carried on at night in either business or residential areas except in emergencies, for which the commissioner of buildings must give special permission. Excessive noise on streets where there are hospitals, schools and courts is also banned.

Other noises mentioned in the ordinance include the use of vehicles that are unnecessarily noisy because they need repair or are carelessly loaded; noisy unloading or loading of vehicles; blowing of stationary boiler steam whistles except as work or danger signals; operation of any engine without a muffler; bellowing of street hawkers; use of a drum, loud speaker or other noisy device to attract attention to theaters, stores or pedlers, and the use of loud speakers or amplifiers on moving vehicles except by permission of the police department. First offenders are subject to $1 fine or one day in jail; second offenders to a $2 fine or two days' imprisonment and so on, to a maximum of a $10 fine or ten days in jail for five or more offenses. All offenses after the first are counted only if they occur within a year after the first.

As man is becoming more and more closely crowded every one of his special senses is subjected to new stresses and strains. We must realize the importance of protecting the brain and the senses of man against such hazards as are easily preventable and of little significance for human advancement. Noise is certainly one hazard with which we may easily dispense.

QUACKS and QUACKERY

By
MORRIS FISHBEIN

THE "PROFESSOR" RADIATES A HOLLYWOOD PERSONALITY, AND IN HIS OUTWARD DEMEANOR IS LIKELY TO BE A TALL, COMMANDING FIGURE OF A MAN.

THE STORY of quackery is a series of bizarre pictures. Whenever a new discovery is made in any field of science, some inspired charlatan is ready to adapt that discovery for his personal gain. The charlatan is known by his appearance and by the bombastic claims that he makes concerning his ability to diagnose and heal disease. His methods are in no way established as scientific or of value. Usually he acquires and holds his patients by his personality. He has a good deal of what they call "It" in Hollywood. He is likely to be a tall, commanding figure with long flowing hair. There are few bald-headed charlatans. The charlatan is likely to have after his name a long alphabetical appendage, indicating a degree of knowledge that he does not possess and that was never conferred on him by any university. Usually his titles are self conferred or perhaps given to him by organizations which he has established for the one purpose of promoting himself and his claims.

The people who follow the charlatans are not always among the most ignorant in the community. We find them not infrequently among the well educated. They follow the paths of charlatanism or quackery with a blind faith like that with which the fanatic follows the false religious leader. The quack, indeed, is likely to claim divine inspiration. There are few records of quacks who, once embarked on a career of charlatanism, voluntarily discontinued and went into the paths of rectitude and honesty. Actually their apostles and followers will not permit them to depart. The quack finds himself in a blind alley from which there is no escape.

ONCE the quack was limited in his appeals to those whom he could reach by word of mouth as he traveled about with his horse and buggy, speaking to the populace as it assembled on the city streets. Now the old medicine man of the type of Snake Oil Cooper has disappeared. The quack today is essentially a business man. He uses the modern methods of business in his promotions. Today he reaches his public by all the means which modern advertising has developed. We hear him on the radio. He lectures in great halls. He advertises in such newspapers or magazines as will carry his advertising. His circular letters reach the prospective victim in

the morning mail, and his cappers insidiously solicit his victims by whispering campaigns wherever the sick and the ailing may be assembled. The quack of today reaches his hundreds of thousands whereas the quack of a previous period reached only tens and hundreds. Today quackery is big business in every sense of the word. For that very reason it is harder to oppose and more difficult to detect and to attack.

P. T. Barnum, one of our greatest American philosophers, was the first to say, "There is a sucker born every minute." Joseph Jastrow improved on this saying by pointing out that there is a crook born every hour to take care of sixty suckers. The ratio has no doubt existed since the beginning of time and is not likely to change even with the coming of eugenic babies. Nevertheless it remained for modern times to add to this series of aphorisms concerning the quack that cynical slogan of Broadway, "Never give a sucker a break."

Remember that quackery is not confined exclusively to the medical profession. There are quacks in the law, in the ministry, in banking and in all the trades; but the quackery in the field of health is the greatest of all the menaces. Money, once lost, may sometimes be regained, but health, once lost, is regained only with the greatest of difficulty. Life, once lost, is never regained! There is no raising from the dead!

THE story of quackery is a never ending tale. Theorist after theorist propounds new gospels of healing and passes at last into the great beyond which remains an unsolved problem. False practitioner after false practitioner arises and surrounds himself with fanatical followers, builds himself a sort of distinction while he lolls in the luxuries and then departs this mundane sphere, leaving it a sadder if not a wiser world. As one reads the roll of the fakirs down through the ages, one becomes almost convinced of the doctrine of transmigration of souls. The same old stories are told in the same old way with only the addition of new wrinkles based on modern discoveries. The same old green goods is wrapped up and delivered to the city and country yokelry who deposit their shekels in the drawer. The same old come-on men sit at the feet of the master dispenser of hokum to learn the technic that they too may go forth in the highways and byways and become minor prophets in their own right.

Beware the doctor who advertises! Beware the doctor who passes out handbills! Beware the doctor who has a big advertising signboard or a big electric sign in front of his office! Beware the man who guarantees a cure or who promises that he can cure any serious disease in one or two treatments! Beware the man who has no fixed residence and who moves from one city to another! Beware especially the one who claims special knowledge that no other physician possesses! All are likely to be quacks and are not to be trusted.

Many a quack depends for his success on the fact that he says that all disease is produced by one cause and that all of it can be cured by reversing that cause. If medicine is to be partitioned off into a series of specialties and cults and practiced by men who have learned only one organ of the body, science is bound to fail. No part of the human body can be detached and treated as separate from the body as a whole. Concentration on an "all or nothing" policy in the treatment of disease must inevitably lead to preposterous and exaggerated claims.

CONSIDER a typical quack of the eighteenth century. He was named James Graham. After his name he put "Servant of the Lord, O.W.L." The words "Servant of the Lord" indicated that he claimed divine inspiration, and the letters "O.W.L." stood for the words "Oh Wonderful Love." Many a cultist has wooed his followers by putting a new accent on love. James Graham promised human beings an elixir of life which would give them eternal youth and freedom from diseases. He had a temple of healing in London. Outside the temple stood a statue of Hygeia, the mythical goddess of health, and inside the temple was a statue of Venus. You could see Hygeia for nothing, but it cost two shillings to see Venus. This is what the modern ballyhoo artist calls the "come-on." It was Barnum who said that the first thing to do was to get them in; after you got them in, you could easily sell them.

Our first great American charlatan was Elisha Perkins. He claimed that all disease was due to an electrical manifestation, and he cured disease with two electrodes about the size of a nail—one of copper and the other of zinc. It cost him about 25 cents to manufacture each set and he sold them for $5. The two electrodes were drawn downward over the body. Elisha warned people against drawing them upward, claiming that this would intensify disease. He promoted the sale of these devices by the use of testimonials which he obtained from those in high places, including senators, governors, congressmen and even archbishops. In those days the leaders of society were not wont to give testimonials. The real development of the testimonial racket came with the modern methods in advertising. The testimonial still continues to be one of the chief measures in exploiting unestablished methods for the diagnosis and treatment of human ailments. Eventually it occurred to two British doctors to make a scientific test of the methods of Elisha Perkins. They made a device similar to that of Perkins, but they used wood instead of metal. Obviously

the wood could not perform as did the metal if the condition was actually electrical. They took the wooden electrodes down to the clinics where the metallic electrodes were being employed, and every other patient was treated with the wooden electrodes. Just as many got well by this method as by the original method of Perkins. When this fact was made known, tractoration, or Perkinism, disappeared from the scene. That is what usually happens when the methods of the charlatan are exposed to public gaze. The Perkins ideas still persist in electrical belts, metallic rings, in heel plates of copper and zinc which, it is claimed, will ground your rheumatism while you are walking. But increasing knowledge of the fundamental facts about electricity makes people more and more doubtful of these devices.

PHYSICIANS today know that the mind plays a considerable part in our fears of illness, in the production of illness and even in its treatment. Few persons stop to realize that it is the tendency of many common diseases to recover almost in spite of what is sometimes done for them. Almost every one thinks that he knows how to cure a common cold. You can put your feet in hot water, decorate yourself with a mustard plaster, drink vast amounts of citrus drinks, take all sorts of remedies or what the government used to say is no good for a cold. At the end of five or six days you are usually getting well. You are likely to credit the last remedy with the cure that has occurred. The scientific man knows that it is the tendency of the cold to recover. The scientific doctor keeps you comfortable and wards off dangerous complications like pneumonia. If you happen to be treated for a cold by a quack or a quack remedy the credit for the recovery is likely to be claimed by the quack himself or the promoters of the remedy.

One of the most common diseases treated by charlatans is rheumatism. Rheumatism is one of the most frequent of disabling diseases. It is the nature of rheumatism to have periods in which the patient feels better and in which the patient feels worse. People with rheumatism can predict bad weather because they begin to feel worse before the bad weather comes and keep on feeling worse until the bad weather clears up. They usually feel fine on a nice sunshiny day. If they happen to be taking a "patent medicine" or if they happen to be submitting to treatment in some other manner when the improvement sets in, they are likely to give credit for the improvement to the last treatment. On this natural tendency of disease the charlatan bases his claims and the promotion of his methods. Nowadays people with rheumatism scurry hither and thither from state to state, from nation to nation, trying to find some magic route to cure and giving each new treatment credit for benefit which would have occurred just the same had they remained at home. But there might not have been the same psychologic effect with the common methods of treatment employed by the family doctor.

AS A RESULT OF EXPULSION BY FEDERAL RADIO AUTHORITIES TWO CHARLATANS ARE NOW HOLDING FORTH FROM STATIONS ACROSS THE RIO GRANDE.

LET us distinguish between charlatanism and quackery on the one hand and adulteration and fraud on the other. When the grocer puts sand in the sugar, when you buy wool stockings that are one-half cotton, and when the motor car that the salesman told you would run 30,000 miles has fallen apart at 20, the dealers are not practicing quackery; they are practicing misbranding, fraud and adulteration. But when a doctor says that he can cure all forms of rheumatic disease by twisting the feet, and when under the guise of such treatment he twists the feet for patients who are suffering from the results of meningitis and infantile paralysis, patients who are staggering to their doom with multiple sclerosis, myasthenia gravis and the shaking palsy, he is practicing a cruel and deceptive form of quackery. He knows and the medical profession knows that there is no hope in such treatment for alleviation or benefit of the conditions concerned. And those who spend their money in traveling to the shrines of quackery to receive these treatments are in most instances bestowing on the quack the money that they should save for proper nursing and

reasonable care during their years of invalidism. This is quackery in its most serious form.

More amusing perhaps is that form of charlatanism which promises youth and vim, vigor and vitality to sexagenarians with accent on the "sex." Here enters exploitation of our new knowledge and our great ignorance of the glands. It is to the eternal credit of the Radio Division of the Federal Communications Commission that it has barred from the air waves in the United States two charlatans who now befoul the American atmosphere with nightly communications from across the Rio Grande. I refer, of course, to those stations which regularly solicit American patronage for operations on the glands and for the use of unestablished cures for cancer. The mere fact that these charlatans can no longer broadcast their messages from American radio stations should indicate to any American listener the utterly unestablished character of their claims and the danger that is inherent in such practices. Yet repeated representations made to the government of Mexico have failed to bring about a cessation of the blatant and monotonous reverberations that lead the senile and the suffering into the hands of these quacks. Neither goat glands nor any other glands will rejuvenate the aged. Yet the graybeards still go tottering with hands outstretched, seeking the mythical fountain of youth that Ponce de Leon sought in vain.

One of the latest developments in quackery is the psychoanalytic or psychologic quack. Out of the interests in these fields during the last twenty-five years has come a new species of pedler of psychologic treatment known as the practical psychologist and the character analyst. Their doctrines are platitudes which strike the intellect of Homo Americanus with the force of direct communications from high Olympus. Their appeal is to the fundamental desires and weaknesses of this same Boobus Americanus: his love for financial success, social prominence, and his desire for relief from vague and fancied ills. Their chief source of income is from women. In private conferences and for a few pitiful dollars, these psychologic quacks, completely uninformed concerning true psychology, attempt to advise women concerning their worries and their mental problems. Women suffering from ennui of idleness, their faces elaborated with artifices to simulate the long lost buoyancy of youth, sigh happily at the dreams and mirages that these charlatans prepare for them. They promise health and happiness, and they give a little erotic stimulation by commercializing psychology.

The credulity of mankind in regard to new apparatus is astounding. All sorts of rays, electric shocks and vibrators are being sold to people as "cure-alls" when their uses in disease are exceedingly limited. The success of ultraviolet in the control of rickets is no indication that it will grow hair on a hereditarily bald head or make beautiful a skin that is full of pimples. Thousands of people have tried to shake their bodies into health with vibrating belts and have instead shaken loose organs that were doing pretty well anchored where nature anchored them.

The most persistent of recent quacks are food faddists. Foods are sold as health foods, as tonic foods and as vitalizing foods. We are warned against dangerous combinations, and the vitamins are promoted as producers of longevity. The wise man of today eats a widely varied diet and in that diet need fear no deficiencies. We are admonished at every turn to eat more of this or that or to confine ourselves wholly to some particular diet. We have those opposed to acids and those who oppose alkalis. Vegetarians attach undue evils to the eating of meat, and whole-wheat fanatics say that white bread causes cancer. There is not the slightest scientific evidence to support the view that the eating of wholesome quantities of any single item of diet, such as meat, bread or any other of the fundamental foods, is dangerous.

Then, too, the last twenty years have seen the rise of the plastic surgeon and beauty quack. Cosmetic operations are most commonly sought by elderly women in love with young men, by

NEITHER GOAT GLANDS NOR ANY OTHER GLANDS WILL BRING THE PONCE DE LEON FOUNTAIN OF YOUTH TO THE SENILE.

aging actresses who still wish to play ingenues, by women whose husbands have lost interest in them, by pugilists who have fought to financial success at the cost of facial continuity, and finally by foolish salesgirls, clerks, aspirants to the movies and unemployed sheiks. There is, of course, a legitimate field for the surgery of the repair of deformities; but the legitimate surgeon does not advertise, he has no "come-ons" and he does his operating in reputable hospitals.

Of all the charlatans who have preyed on mankind since the earliest times, the most despicable are the ghouls who feed on the bodies of those who are dead or dying from cancer. The medical profession today does not know the cause of cancer. It does know that the one real hope for any patient with this condition is early diagnosis and prompt treatment either by surgery or by the use of radium and the x-rays. We can point now to innumerable cases of people with cancer who have been given almost a normal life expectancy, after the diagnosis of cancer was made, through the benefits derived from these methods of treatment. Yet throughout our country and Canada today there are charlatans who exploit serums, vaccines, caustic pastes, and mixtures of herbs and roots and vegetables which are alleged to be of specific virtue in the treatment of cancer but which have been shown by the passage of time and by scientifically controlled experimentation to be completely without merit. Knowing the fear that pervades the population in relation to cancer and knowing that the people who are dying of this disease will grasp at any straw of hope which may be offered, these charlatans take even from the poor the last few pennies that have been laid aside for purposes of burial, leading them on by unwarranted promises of success.

WHEN the famous Pasteur was asked by his students for some advice to guide them in their scientific careers, he said to them, "Be skeptical." A certain amount of skepticism is your only salvation against the wiles of the quack and the charlatan. Be skeptical; and when you are in doubt, ask your family doctor whose reply will be based on a knowledge of medicine and who will answer you with a statement in which you may have confidence. The Bureau of Investigation of the American Medical Association has a card index listing hundreds of thousands of quacks and quackeries, of nostrums and fraudulent medicines. If you are in doubt, write to the American Medical Association at Chicago. The information is freely available to any one as a service of the doctors of this country for the health of the people.

CALLING ALL VACATIONISTS—
CALLING ALL VACATIONISTS

HYGEIA Continues to Broadcast Helpful Hints for Healthful Holidays

That bantering, lovable family, the Martins, continue on their rollicking way, enjoying their wisely planned vacation. In the August issue, *Dr. W. W. Bauer* and *Florence Marvyne Bauer* tell how Mother scores a triumph with her "restaurant knowledge"—and even Dad turns health sleuth.

"Attention! Rest!" for vacationists—or any others who are inclined to take life at too strenuous a pace—the advice given in *Berenice Lowe's* article will prove a boon; and the recipe for relaxation, presented in the definite and concrete form of the day's schedule, will be excellent for balance in a too busy world.

If you're going swimming you will want to be prepared against the dangers described in *David D. Levine's* article "Athlete's Foot — The Constant Invader." Excessive perspiration of the feet and improperly cleaned shower rooms, swimming pools, beaches and bathrooms are among the important factors discussed as contributory to the spread of this annoying infection, ringworm of the feet.

In "Impending 'Mosquito Massacres,'" *S. R. Winters* presents information of exceedingly timely interest. "Coming as an unpleasant aftermath in the wake of recent floods and shattering storms throughout our country, the inevitable menace of increased mosquito hordes constitutes an amazing problem which has taxed human ingenuity and resources to the utmost toward a proper solution. . . . Acting with a view toward complete prenatal mosquito extermination as well as successful elimination of a potential parenthood, the United States government has at various times appropriated vast sums for certain phases of its continual combat against an apparently frail but insidious enemy." The interesting experiments which have been conducted, their results and the proposed program, involving various federal agencies and administrative bodies, form an instructive and constructive background for a topic which is of importance to the individual as well as to the nation.

THE TETANUS BACILLUS

The Fourth in a Series on
THE GERMS WE LIVE WITH

By

HERBERT L. HERSCHENSOHN

AN AMERICAN tourist was enjoying a cool beverage at an outdoor cafe in Panama when the glass slipped from his hand. It shattered into bits, one of which punctured his right palm. He carefully removed the sliver with a pen knife and licked the wound clean with his lips.

About a week later, for apparently no reason at all the young man became exceedingly nervous and irritable, which was contrary to his usual calmness and poise. His sleep was interrupted by terrifying nightmares. During the day he repressed with considerable difficulty the continuous desire to yawn.

One evening the muscles of his jaws seemed to tighten so that it became impossible to open his mouth wide enough to eat. Within a few hours he became aware of a peculiar stiffness of the neck. A sudden chill overcame him, and the perspiration trickled down his skin in rivulets.

During the night his wife, who acted as nurse, was alarmed to see his body seized by a spasm. Only the head and heels touched the bed, the rest of his body being arched upward. When she looked at his face she recoiled in horror. It was hideous. The angles of the mouth were drawn as near to the ears as the muscles could stretch them. The eyebrows were raised. The effect was monstrous, ghastly.

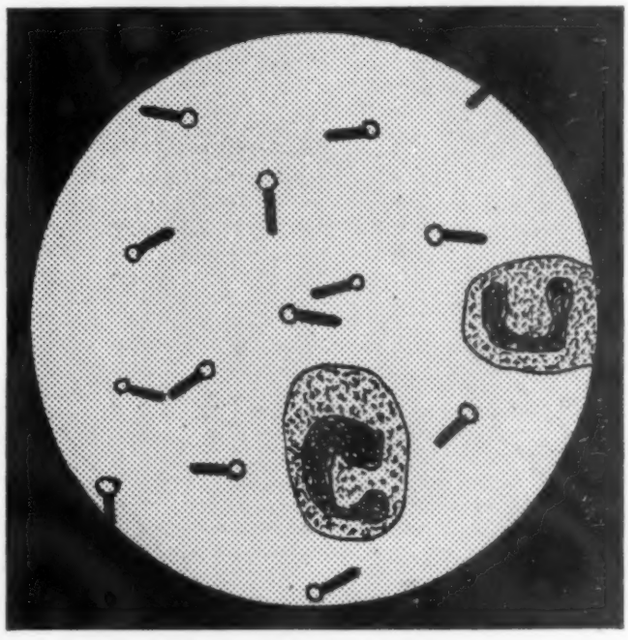
The eyes of the poor fellow watched every movement the wife made although the head remained perfectly still. It was evident that he was fully aware of what was happening and that he suffered untold mental and physical anguish. The muscles of his neck stood out like heavy ropes almost ready to crack under the painful tension.

The wife summoned the hotel physician. At the first glance at the patient he said, "This is one of two possibilities. It is either lockjaw or poisoning by strychnine. We shall soon find out which it is."

Further examination revealed that this was a case of lockjaw. The physician had observed that at no time did the body relax completely. It was in a state of continuous spasm with severe superimposed convulsions. In a case of strychnine poisoning the body would have relaxed completely between the spasms.

Without a moment's delay the man was rushed to the hospital, where tetanus antitoxin in large doses was injected into the spinal canal and into the veins. The treatment was successful after a hard battle. The man recovered against heavy odds, although many other persons would have succumbed under identical conditions.

LOCKJAW is caused by a germ called the tetanus bacillus. It takes up its residence normally in the intestines of herbivora such as cows, horses, sheep and goats. Obviously, this bacillus will be found wherever manure exists. It is unfortunate that its habitat is not limited to this distribution but instead is found on almost every object and in any place.



THIS SEMIDIAGRAMMATIC VIEW OF THESE TETANUS BACILLI SHOWS THE SPORES. THE TWO LARGE BODIES ARE WHITE BLOOD CELLS.

FIRECRACKER ACCIDENTS ON THE FOURTH OF JULY ACCOUNT FOR THE USUAL LARGE NUMBER OF CASES OF LOCKJAW THEREAFTER.

Throughout the world the tetanus bacillus abounds luxuriantly in the soil. It has also been found in house dust, pieces of wood, mortar, stones and machinery. In fact, it may be on almost any object that can be thought of.

DURING the World War there were thousands of cases of lockjaw. The vast majority occurred as a result of contamination of wounds as the soldiers crawled along on the ground.

Today most cases of this disease occur in the tropics. It is so common in this region that cases of lockjaw in the new-born and the mother are frequently observed. In the infant the infection takes place in the navel.

The tetanus bacillus is so small it can be seen only through the microscope under high magnification. It looks like a little rod with a ball at one end. The ball is called a spore, and it performs the function of a seed. The spore lies dormant for weeks and months, sometimes for years. When it finds itself in the soil or in a fresh wound the moisture about it permits it to grow into a new bacillus which is ready to strike and eject its powerful poison. This is especially true if the spore is so deeply imbedded that there is no air about it. The presence of oxygen is detrimental to its development.

Man and almost all domestic animals are subject to tetanus. Some animals are far more susceptible than others. Mice and guinea-pigs, for example, succumb quickly whereas fowls are practically immune. The amount of toxin necessary to kill one hen could kill 500 horses.

UNLIKE most other infections the tetanus bacillus does not multiply to any great extent in the body. When it finds its way into a wound it stays in that vicinity. The poison which it liberates, however, travels swiftly along the nerves. A small amount also finds its way into the blood stream. The speed with which the poison finds its way through the body precludes all possibility of staving its progress by amputation.

It is a peculiar fact that if there are no other types of germs in the wound, tetanus is not likely to develop, whereas if there are, the tetanus bacillus will certainly work havoc. If the ordinary germs are killed by appropriate medical treatment of the wound the possibility of lockjaw is thereby considerably decreased.

The application of adhesive tape directly over a wound, as is often done in bringing the edges of widely separated skin together, is to be condemned. Cases of lockjaw have been reported as the result of such a practice.

It is an odd fact that despite the universal distribution of tetanus bacilli there are relatively few cases of lockjaw when compared to the number of accidents. This is especially true in the United States. This is due, in part, to the injection of tetanus antitoxin, which is routinely practiced by physicians everywhere in the country when treating wounds which have the appearance of favoring tetanus infection.

About a week after the Fourth of July a number of cases of tetanus are observed. These cases are caused by firecracker accidents. Wounds inflicted by blank cartridges are also vulnerable to this infection.

After the absorption of the poison there is usually a considerable lapse of time before any symptoms are noticed. This may vary from several days to several weeks although there is a case on record of an injury resulting fatally on the same day the injury was sustained. The wound is often healed completely by the time the symptoms are noted.

ONE of the first indications of tetanus infection is a sudden change in the victim's disposition. He becomes unusually irritable and restless. He is troubled with insomnia and, when sleep finally does come, he has terrifying dreams. There is a feeling of stiffness of the neck and sometimes of the legs and arms. The jaws feel tight, and it is an effort to open the mouth. Chills, accompanied by fever, sweating and a severe headache, are characteristic of the onset of tetanus.

The attack is a gruesome spectacle. Every muscle in the body seems to be drawn taut. Sometimes the arms are unaffected. The body becomes as rigid as a board and is most often arched like a bow. The contortion of the facial muscles into a sardonic grin, when once seen, can never be forgotten.

The spasms come on suddenly and are incited by the most trivial stimuli such as the banging of a door or unexpected touching of the body. There is an uncanny supersensitiveness to light, noise and touch. The body is never entirely free from the spasm, each attack being a superimposed convulsion. The pain is extremely agonizing. Unfortunately, the victim retains his consciousness throughout the ordeal.

TETANUS can be prevented by the injection of an antitoxin under the skin in the vicinity of the wound as soon after the injury as possible. Every moment's delay means added danger. One should not hesitate to have this prophylactic treatment instituted when the wound is contaminated with street dirt or garden soil or is inflicted by implements employed on the farm.

If every one were fully aware of the horrible consequences of tetanus infection and the simplicity of its prevention, man would be able to live amicably with the tetanus bacillus without fear of its harmful influences.

[NOTE.—In the August issue, Dr. Herschensohn will discuss the staphylococci, the fifth in his series on germs.]

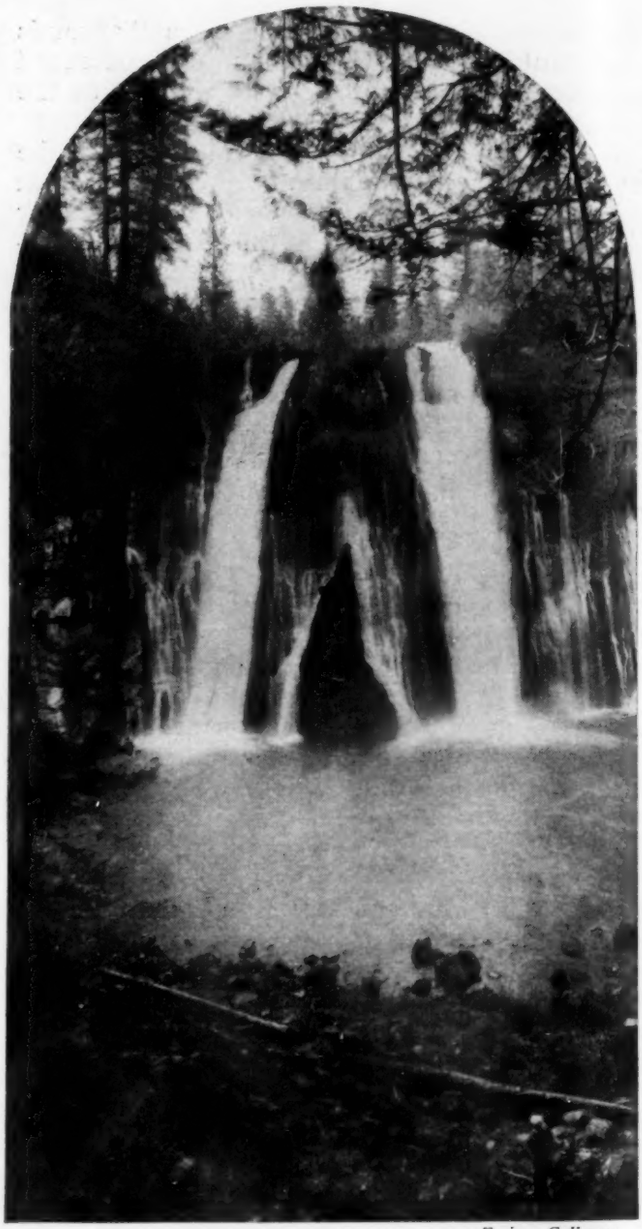
CATARACT: An Article in Which ABRAM B. BRUNER Deals with Its Facts and Fallacies

THE EYE corresponds in many ways to a camera, but being a highly specialized part of the human body it is at the same time a complex and delicate organ. Close observation will reveal that there is a transparent anterior portion which corresponds to the crystal in a watch. This is known as the cornea. When normal and healthy it is perfectly transparent.

A short distance back of the cornea is a tissue membrane or diaphragm which gives color to the eyes and is known as the iris. In the center of the iris is a round hole, the pupil, which corresponds in the human eye with the aperture of a camera. When one looks at a normal eye the pupil looks black because one is looking down a hole. Just behind the pupil lies the lens, a small structure corresponding to the lens in a camera. Because of this lens and its ability to change shape the human eye is able to focus objects at various distances.

The lens consists of an outer layer or capsule and an internal structure divided into the cortex and the nucleus. In normal eyes both the capsule and the lens proper are wholly transparent and therefore invisible. A clouding of the lens or its capsule or both produces the condition known as cataract. Seeing through such a cloudy lens is comparable in effect to trying to see through a piece of opaque glass.

Cataracts may and do occur at any age. Those seen most frequently are the congenital cataracts in young children, the cataracts due to injury to the lens and the so-called senile cataracts seen in middle aged and elderly people. Congenital and senile cataracts are sometimes spoken of as primary cataracts because they usually occur without other disease of the eye and their cause is not well understood. Many cataracts are often called secondary because they come on during or after some inflammation in the eye or a disease of the general system. Such cataracts commonly occur in glaucoma or hardening of the eyeball, in certain diseases of the iris or retina and in some systemic conditions such as diabetes and severe general electric shock.



Ewing Galloway

THE TERM "CATARACT" ORIGINATED FROM THE COMPARISON OF A WATERFALL TO A VEIL DROPPED WITHIN THE EYES.

One of the commonest questions asked in regard to cataract is the influence of heredity. Heredity does play a part in many cases of congenital cataract. In the most common type of cataract, the senile, heredity has an influence, for since there is a definite familial tendency toward longevity or old age, cataracts affect a fair percentage of elderly people; the longer they live, the more apt they are to have cataracts.

THE idea that it is necessary for an eye surgeon to wait until the cataract develops to a certain point before operating is one of the

prevalent false conceptions regarding cataracts. The eye physician, or ophthalmologist, classifies cataracts according to their stage of growth as beginning or incipient cataracts, immature or unripe cataracts, mature or ripe cataracts and overripe cataracts. In the days of our grandfathers it was customary to allow the cataract to become ripe or of a certain density before removal was attempted.

Under modern methods of treatment the individual with cataract can forget all about whether or not it is ripe. He is assured that today there is no need to sit around in a state of partial blindness for months waiting for a cataract to become "ripe." The modern eye physician is competent and able to remove a cataract as soon as vision has been reduced to a point where it no longer permits the patient to continue his usual occupation.

AN EYE physician who is permitted to perform surgery is always a physician with an M.D. degree; that is, a graduate of a regular school of medicine. Following a general medical course he has spent extra years of preparation and training in studying the diseases and anomalies of the human eye. It is true that the eye physician also examines eyes and prescribes glasses, but this is only a part of his job. He must also be an expert in his knowledge of the anatomy, physiology and diseases of the eyes and the effects on the eyes of general bodily diseases.

An expert examination to determine the presence or absence of beginning cataracts can be done only by a properly trained eye physician, for he must be able to recognize not only cataract but also the numerous other conditions in the eye that may be mistaken for cataract or may be present as a complication. If an eye physician finds signs of early cataract or other eye disease, in a large percentage of cases he will want to be able to make his examination more thorough and complete by examining the eyes after instilling several drops of medicine.

There is a great misconception regarding the use of medicine in examining eyes. Entirely aside from the use of drops for the treatment of eye inflammations, the eye physician uses drops also for two specific reasons: First, by the instillation of several drops the pupils can be temporarily enlarged and a better view of the interior structures of the eye secured. Second, drops are used in children and young adults in testing for glasses. These drops act in such a way as temporarily to quiet the focusing power. Hence the examination can be made with the eye at rest. As relaxation of the focusing power cannot be had voluntarily, this method provides the only scientific and accurate means to make such tests.

Medicines used in cataract in the early stages are not always successful. One or two drugs seem to retard the growth of the cataract in some patients. Once a cataract is well started, however, no known drug or treatment will cause it to clear up. The only effective treatment of cataract is by surgical removal. This is accomplished by removal of the lens from the eye. In little children the lens is soft, and if broken up by a fine needle it will gradually absorb. In older people such a method will not work, and other operations must be done.

Many persons ask why cataracts are sometimes removed by one operation, and in other cases a so-called preliminary operation is performed. The reason is simply that the eye physician is trying to produce results with the least possible risk to his patient. If the lens is swollen to greater than its normal size or if the patient has only one eye, doing a preliminary operation is merely being conservative. In a question of this kind it is best to follow the eye physician's advice.

If a patient's general physical health is good, age is not a contraindication for this procedure. There is no surgical shock or severe discomfort in such operations, and they are done with local anesthesia. Cases that are not operable are largely those in which there is definite indication of other disease in the eye which would negative the effects of the operation.

THE period of disability while the patient is having a cataract removed averages about one month. Usually from twelve to fourteen days are required in a hospital. Operations should not be done in patients' homes or doctors' offices. The chances of complications are greatly increased, and such surgical methods are condemned by the outstanding members of the medical profession.

Accurate percentages cannot be given, but it can truthfully be said that the majority of operations are definitely successful. Naturally, there are failures which arise from many causes. In treating and operating on cataracts in older people unforeseen complications can and do arise.

It must be understood that everything which interferes with or reduces vision is not cataract. There are numerous other afflictions of the eye. The first thing to do is to find out what is wrong, for delay may be fatal to the sight. Many eye troubles can be cured or arrested if cared for in time. Neglect and delay may result in blindness.

If you think that you yourself or some member of your family may be developing cataract you need not look forward to hopeless blindness. However, be logical and intelligent. Do not take for granted what is wrong with you, and do not trust the diagnosis or advice of well meaning friends or the back-fence volunteer adviser who is always ready with a home-made cure. Ask your family physician to refer you to an eye physician.

Tomorrow's Drivers

THERE WAS no hiding the excitement in young Henry's voice as he burst into the dinner table conversation with the query, "Dad, when can I have the car? Can I have it this Saturday? Can I go out with you and Mom tonight and show you how I've learned to drive? The other kids—" and here the younger children broke in with, "Aw, you just want to show off how big you are!" Mr. and Mrs. Johnson glanced at their 14 year old son and smiled at his eagerness.

"We'll have to wait a while about that, young man," the father said. "Don't any of those shiny new school books of yours tell you there's a law against driving while under age? And by the way, I wouldn't like to place any bets on your driving. Why, I'm still only a beginner myself!" he teased.

"But Dad, George and Larry and the skinny kid in the next block get to drive their cars everywhere. Their folks don't care. Oh, gee, can't I please have the car? Driving's easy as pie!"

While the Johnsons were able to end the first round of their son's pleadings with good-natured "kidding," they knew that the issue would arise again. Henry would still want to drive the car, and if permission was refused there was no telling what he would attempt in an effort to "keep up with the crowd." Meanwhile wasn't there something that could be done to teach Henry the fundamentals of safety in driving? Could he be shown that handling an automobile was something more than a "lark" and a thrill?

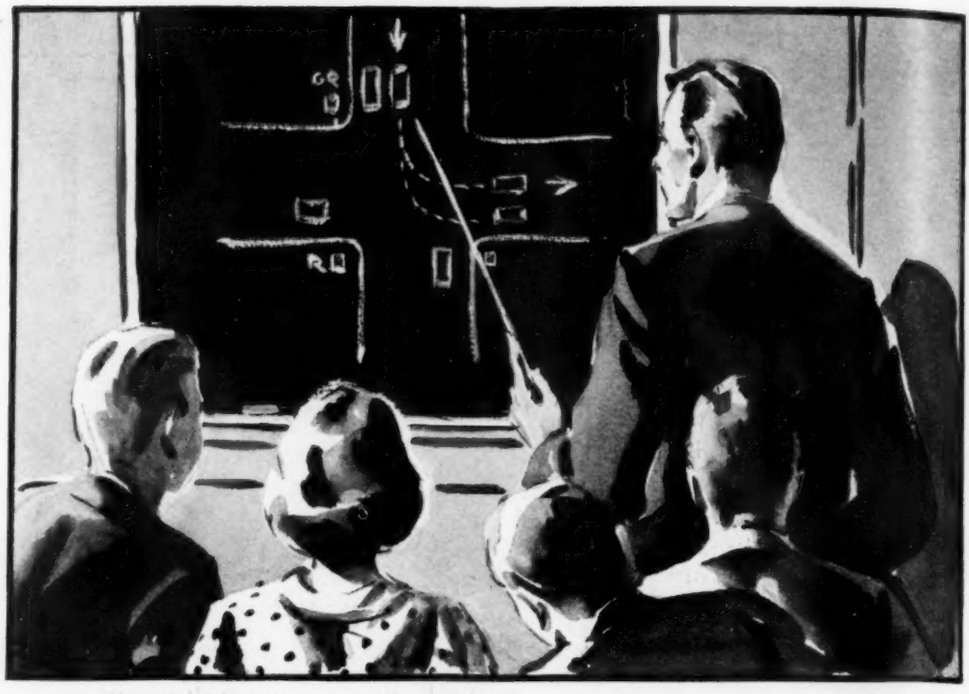
Because driving is not only a family but a national problem, with a bitter price to pay for mistakes, national and civic groups are stepping in to ease the parents' load by backing a nation-wide program of safety education in the schools. Sensibly enough, it is believed that safety education cannot be started too early. Hence the elementary school safety program. That the young child should be impregnated with fear is farthest from any teacher's objective. The aim is high, and it is practical: Let the school child form safety habits which will serve him

By
ELEANOR EVERET

involuntarily in time of emergency. He will early learn that the only right way to cross streets is the safe way. He will learn how to be obedient to simple traffic regulations and why they must be obeyed. What parent will deny that the school must shoulder definite responsibility in the matter of safety education?

A few years ago Harold Rugg, professor of education at Columbia University, asked and answered this question: "Should the public school accept safety education as part of its obligation to society? Undoubtedly. In the

AN ACCIDENT AHEAD! A DANGEROUS HAZARD APPEARS WHEN, IN ATTEMPTING TO MAKE A HASTY PASS ON A BLIND STRETCH OF THE ROAD, THE DRIVER ENCOUNTERS ANOTHER MOTORIST COMING TOWARD HIM. HE THUS IMPERILS THE OCCUPANTS OF THREE OR MORE CARS, DEPENDING ON THE DISTANCE AT WHICH ANOTHER FOLLOWS.



THE CLASSROOMS OF MANY SCHOOLS ARE NOW BEING UTILIZED FOR INSTRUCTION IN SAFE DRIVING TECHNIC. EMPHASIS IS PLACED ON THE CAUSES AND PREVENTION OF ACCIDENTS, AND THE CORRECT MENTAL ATTITUDES TO ASSUME IN DRIVING.

same sense that it accepts the obligation to teach children to read, to appreciate the value of robust health, to understand the conditions and problems of industrial and political society, to enjoy the fine and beautiful in music, art and literature."

With the aid of a little practical strategy, safety is being made an integral part of the grade school curriculum. Art classes include safety posters and slogans in the regular work. In arithmetic classes the children employ the newly learned principles of addition and subtraction to figure the city population minus the death toll from auto accidents the past year. The first work in civics brings to light the meaning of law and the government behind it. Safety literature alone cannot accomplish the gigantic task of training safety habits into the youngsters of this nation.

THE school boy patrol idea has spread rapidly. At present, patrols are operating in more than a thousand municipalities. The plan originated almost simultaneously in Newark, N. J., and in Tacoma, Wash. Standard regulations for the patrols are now being revised by a joint committee representing the National Education Association, the United States Office of Education, the National Congress of Parents and Teachers, the American Automobile Association and the National Safety Council. The purpose remains the same; namely, the training of pupil pedestrians, *not* motorists. No one of the white-belted boys is to attempt to direct or control vehicular traffic. He remains on the curb, holding the children back until a safe interval in traffic occurs. He then sends them across in an orderly manner. Furthermore he should not be equipped with tempting flags, whistles or other signaling devices. When a school corner is so busy that safe intervals for crossing are not frequent enough, a policeman can be put in charge.

The responsibilities of patrol and other safety activities in the school meant for one boy a decided change in personality and character. He had not been successful in his class work and had the unfortunate ability of clashing continually with his teachers and classmates. He was, however, elected to the safety council. An observing teacher recommended him for an important post. A look of amazement spread over his face. "Do you really think I can do it?" he asked. That boy was literally lifted out of his lethargy. He took an interest in the other children, especially the little ones of the school. He began to develop initiative, and he has learned the meaning and importance of cooperation.

Every city of any size in the United States faces the increasingly serious problem of providing for the safety of school children. They cannot be expected to have the same presence of mind that adults have. In moments of sudden danger they are prone to lose all sense of direction and stumble, terror stricken, right in front of an oncoming car. The school tunnel is one solution. In one California city there are approximately seventy-eight economically built tunnels. Their length varies from 100 to 300 feet. Each cost in the neighborhood of $8,000. The necessity for traffic policemen or patrols where children cross the streets has consequently been eliminated.

In the high schools consistent attempts are being made to offset the apparent oversupply of safety theories with practical driving instruction. While the teaching problem is different where older children are concerned, the need

for safety education remains exceedingly great; for the fact is that accidents are the chief cause of death to children between the ages of 15 and 19. Parents willing, many high school students are driving cars, and many more expect to soon. The states of New Hampshire and New Jersey are competing for leadership in the movement to teach these drivers of tomorrow. There are already more than fifty-seven high schools in New Hampshire with classes in automobile driving. In New Jersey there are forty more.

The instruction shies away from a routine recitation of rules of the road. Although state regulations are studied and discussed, a broad survey is made of the entire field of safe driving. Emphasis is placed on the causes and the prevention of accidents, the mechanics and safety features of the modern car, the mental and physical requirements of good driving, and the place of the automobile in modern living. The work is made as practical as possible. A cut-down chassis is often brought to the school for use in a lesson in mechanics. Motion pictures, slides and posters complete the other study facilities. When a student has completed the driving course he is given two examinations—one prepared by the instructor and the other by the motor vehicle department of the state. Part of the state examinations are consequently waived when a student applies for a driving license.

The Chicago Board of Education is now planning for classes in automobile driving to be held in the city high schools. Indiana, which has a state-wide program of health and safety education, will insert twenty hours of safety study in the semester schedules of the high schools. "Good" driving, rather than accident statistics, is the basis of the appeal being made to the young people. Courtesy and good manners on the highway are being stressed. In other words, the positive side of safety is out in front. The student learns it is better in the long run to be applauded for his skill in all phases of motoring than for his daring in sliding past a truck on a "blind" curve.

Radio broadcasts from the Municipal Court in Chicago are also turning the spotlight on the problem of the young driver. Surprising as it may seem, numbers of young people are being discharged, after appearing in court, with one requirement: They must visit the county morgue or the county hospital and view the havoc wrought by reckless motorists. In place of a fine the young defendants contribute to a charity organization. This arrangement prevents their being entered on the court records as having committed a crime. The old practice of "fixing" has been largely abolished in Chicago courts. Many a ticket holder who used to "have it fixed up" is now cooling his heels in court.

Parental responsibility is of paramount importance where safe driving is concerned. How many adult drivers realize that a "slick job" of traffic weaving on a crowded boulevard or highway is seldom not noticed by the young folks in the back seat? They think it's "slick" too and doubtless will wish to try their hand at it on some later date. Children instinctively imitate what Father and Mother do. "It must be O.K. if Dad does it," and so on. They hear "things" said as the family car tries vainly to get by a lumbering truck, and they think it must be natural for drivers to become angry with each other. Bragging about the number of times "I got away with it" breeds just the opposite of a safety attitude in the oncoming drivers.

As Mr. Johnson said to his eager son, many adults are still learning to drive. Paradoxically enough, many a man or woman at the wheel knows more than is usually evident. For instance, the average man *knows* that sportsmanship shows up on the highway and places other than the football field. He learned, with perhaps some thumps, that sportsmanship in school was playing the game according to the spirit as well as the letter of the rules of the game. But what happens? He gets his car under way. He thinks nothing of jumping a traffic light or forcing a pedestrian to hop for the nearest curb. Such "fouls" on the highways of the United States cost more than 36,000 lives last year.

Where is the father who can explain what is meant by the much heralded "right of way"? Under the whip of emergency there is no time to weigh technicalities. Lives are at stake. The sportsman will be willing to surrender a few seconds' time and let the other fellow pass the intersection. He will likewise have the satisfaction of being alive. Motor mania has made gentlemen into boors; square-shooters into bullies. The contented soul who takes a whole afternoon to fool around in the back yard, fixing a broken scooter or raking leaves, takes the car out of the driveway and suddenly finds he hasn't a moment to lose. Given the opportunity, he will send the machine leaping like a boxer to meet an opponent, perhaps at the mild speed of 65 miles an hour. Right of way is essentially a legal conception. It is not a safeguard. It is valuable only in determining the cause of the accident at the inquest. The futility of argument is well expressed in this bit of rhyme:

> Here lies the body of Jonathan Day
> Who died maintaining his right of way.
> He was right, all right, as he sped along,
> But he's just as dead as if he were wrong!

According to W. H. Cameron, secretary and managing director of the National Safety Council, "You can tell the farmer, the housewife, the industrialist or the engineer how to

best promote safety in his special field of activity, but try and tell the owner of a new car what to do! The keynote of the traffic problem today is the car, the road and the driver; by all means, the driver."

The foot that presses the self-starter, the hands that grip the wheel are meant to belong to a rational human being. But they can undo in an instant all the years of prolonged scientific research which have gone into the building of the modern motor car. The machine that comes from the factory is as nearly perfect as can be, ready for the "fifth wheel," the driver. We may well gasp at the army of new recruits that are pouring forth from automobile factories each year eager to join the standing army of more than 25 million cars already on the road. When one is caught in a crowd of hundreds of assorted human beings, one expects to have a toe squeezed or a back jostled. One may even laugh about it while looking for the nearest exit. But when that jostling occurs between motor vehicles at speeds varying from 40 to 80 miles an hour, there is no laughing and there is usually only one exit.

DRIVERS may, generally speaking, be put into four classes. There is the individual who, as a father and a business executive, may have a reputation for the greatest consideration and judgment; but in his car he dons a cover-all of indifference or bravado. He forgets that such things as centrifugal force and curves can easily prevent his getting to the golf club, no matter how fast he goes. It's the same as if 1,400 pounds were trying to push him off the road, should he be going 60 miles an hour. The only thing that keeps the car level on a turn is the friction of the tires. When centrifugal force gets stronger than friction, off the road he goes, golf clubs and all.

The second type of poor driver is the person whose sight, hearing or strength is defective. Many an adult worries righteously over the children's eyes, ears and general health but believes that his own troubles will "wear off." Some one should gently but firmly see that all such drivers are relieved of their driving duties until their defects are attended to.

The third type of driver finds himself going home after a long, hard day or a long, hard social evening. His senses are dulled by fatigue, carbon monoxide or alcohol. Should fate toss him up before a judge in a traffic court, he seldom can explain what and why things happened.

The question of alcohol naturally has to do with all types and ages of automobile drivers. According to Mr. George W. Fleming of the Keep Chicago Safe Committee, it isn't the actual drunkard who spreads danger about him on the highway, so much as the man or woman, young or old, father or son, mother or daughter, who has had "only a few drinks." Some one has said, rightly enough, that alcohol takes away the sense of self criticism. It drowns that "still, small voice" of consideration and judgment. Worst of all, it slows down the mental faculties slowly but surely. The offender is not aware of it and accordingly takes unnecessary chances.

Carbon monoxide is insidious, odorless and highly dangerous. The gas can reach the interior of the car in several ways: the car ahead may be throwing off the gas from its exhaust pipe; there may be cracks in the floor boards, or a faulty exhaust pipe may give off fumes which the wind can carry back into the car through the rear windows. The whole family may begin to complain of severe headaches and lament over Sunday driving in general.

FINALLY, there is the driver who provides his family and friends with repeated thrills. Face flushed, eyes a-sparkle and hands dropped casually over the steering wheel, he regales his listeners with tales of past exploits. He takes chances. He "eats up" speed. He sees that no one misses anything—but breath perhaps, after a bit of a skid on that patch of gravel a mile back.

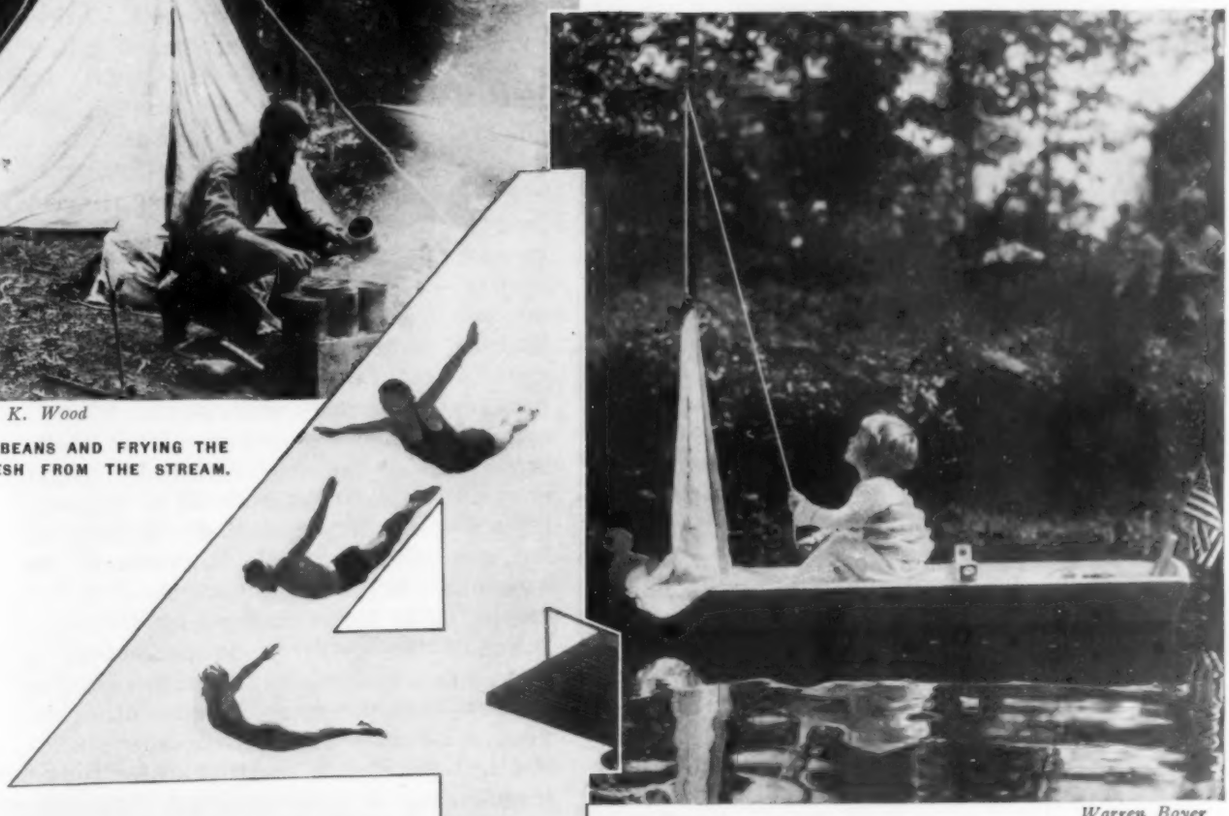
"Like the backwoodsman who saw 'Indian signs' in a broken twig, a fragment caught on a bush, or the faintest false note in a bird call—the driver who is usually free from trouble sees things on the road that most of us don't see," read a General Motors broadcast some weeks ago. He slows down at the appearance of mud on the concrete. There may be a side road or the end of pavement ahead. He instinctively watches his step at the sound of a locomotive whistle in the distance. When the car ahead gets out of line and then slips back again, he doesn't need a periscope to know there's a car coming in the opposite direction. He reads danger signals in the cars whose fenders and bumpers and extremities are already creased and dented. He remembers the fellow behind him and gives warning of turning in ample time.

Speed has both blessed and cursed modern civilization. Through its beneficence, distance has been conquered and culture blended. Records have made history, and nerves have been shattered. Time has been reduced to a minimum; leisure and recreation with it. Life has been saved and life taken. By all available means—horror, statistics, pleadings, threats—safety groups are continuing their efforts to educate young and old on the advantages of safe driving. The inevitable hue and cry against the terrific toll in human life has taken several forms. Some urge that governors be put in all cars by law, to remove all possibility of reckless speed. Some feel that the auto manufacturers are to blame. General Motors answers this sally in the pamphlet, "We Drivers": "Perhaps the most important *(Continued on page 663)*

The FOURTH—
How Shall We Spend It?

Richard K. Wood

HEATING BEANS AND FRYING THE FISH FRESH FROM THE STREAM.



Warren Boyer

ABOUT TO HOIST SAIL AND SEE THE GREEN COASTS OF THE PARK LAGOON.

Cy la Tour

FOURTH OF JULY AND FIRECRACKERS! "FUN" AT TOO EXORBITANT A PRICE.

Cancer Education

FIGHT CANCER WITH KNOWLEDGE

By

Ira I. Kaplan

BROADLY defined, education is the systematic development and cultivation of man's natural powers. Education in cancer is the systematic development of that knowledge which will lead man out of the darkness of fear and despair regarding this dreadful scourge.

The program of cancer education has two phases, one dealing with the dissemination of the knowledge that the public should have about cancer and the other comprising the instruction of the doctor in the knowledge he requires for the proper recognition, diagnosis and treatment of cancer. It cannot be denied that the cancer problem is very serious, for despite all efforts and the marked advancement in general medical knowledge many thousands each year succumb to this disease. Moreover, even during the past decade there has been an increase in the number of deaths from cancer, so that today it ranks second in the causative agents of death in New York City, being topped only by heart disease.

One of the chief problems of medicine today is to discover ways and means to lower the cancer death rate. The obvious hopelessness of so many of the cases is too often due to neglect on the part of the public in seeking proper advice and treatment in the early stages of the disease. In most instances, cancer is curable in its beginning stage. The educational campaign to enlighten the public regarding cancer—how to recognize its early manifestations and what to do regarding its prevention and care—is being ably carried on by the American Society for the Control of Cancer.

As far as is known today, cancer is not inheritable; therefore it must be an acquired disease. In the majority of instances, cancer is associated with older people, and, except in special cases, the younger generation is for the most part free from it. We are therefore confronted with the ironic paradox that as we succeed in prolonging the span of life we are at the same time increasing the possibility of cancer occurrence.

Physicians and health officers have long realized that as a rule the diseases possessing the greatest menace to health have been controlled by preventive measures. While the exact cause of cancer is not known and it is still not certain that all cancers are caused by one exclusive agent, careful observation and study have shown that certain factors, such as persistent irritation, may give rise to cancer. It is therefore not unreasonable to expect that by avoiding such conditions, the development of cancer can, to a great extent, be forestalled. Among such harmful conditions may be mentioned bad dental attachments; dirty, jagged and infected teeth cutting into the surrounding tissues; repeated burns on the lips from cigaret or pipe; persistent exposure to irritating chemicals; faulty eyeglasses that pinch and bruise the skin of the nose; and infections, such as syphilis. Cancer itself, however, is neither infectious nor contagious, nor is it transmitted from one member of a family to the others.

OBSERVATIONS and careful, scientific study have disclosed that at the outset, cancer is a local disease, confining itself for a long time to the vicinity first attacked, and that a cure depends on the stage at which the malady is noted and on early and proper treatment. In studies of the behavior of this disease, physicians have learned to look for certain recognizable manifestations indicating various stages of its presence. To the physician who has charge of the care of cancer patients, nothing is quite so discouraging as to receive those patients after the disease has been permitted to run rampant for a long period. Generally speaking, any abnormal lump, sore or body friction calls for investigation. Sudden or persistent lumps in the breast, muscles or bones; irregularities in menstrual bleeding; irregular bowel movements, especially when blood appears in the stool; long persistent skin ulcerations, and excessive continual loss of weight call for consultation with the physician.

Since the medical profession knows that cancer in its early stage is curable, its constant cry is, "Why do not these patients come to us when the disease is still in a curable stage?" The answer is found in the fact that there is altogether too widespread a lack of information regarding the early signs of cancer.

Unfortunately, cancer patients seem to be complete fatalists. To them the disease is always hopeless; and if they find they have it, they regard their doom as sealed. If they suspect they have cancer they refrain from seeking medical advice, dreading a confirmation of their suspicion and fearing a possible surgical operation. All these factors tend increasingly to depress the sufferer and make him conceal the affliction until it is accidentally discovered or until associated symptoms make its further concealment impossible or intolerable. This despairing attitude is unjustified, for as has been said before, early cases of cancer are curable, and even in advanced cases much can be done to ameliorate the severity of the condition and prolong life in comparative comfort.

THE victim of cancer should not be shunned or confined to the worst quarters of the home. Fresh air, sunshine and cheerfulness are as essential to him as to the healthier members of his family. Not all cases require hospitalization, and as this disease is neither infectious nor contagious, cancer victims may readily be cared for at home during the period of their convalescence.

Among the important agencies caring for patients at home are the social service departments in the cancer hospitals. These organizations not only look after the needy patient medically, supplying him with such necessary special care as he requires, but also see that he comes early enough in the progress of the disease to enable treatment to be effective and at the same time relieve him from financial worries. Private philanthropy has a great mission to perform in aiding these cancer patients and their families against the economic consequences of the disease when their private resources are insufficient. Financial help is particularly needed for the period of invalidism during and after treatment for cancer. The need of funds for the work is urgent, and the public could do nothing better than to give these agencies wholehearted support.

Because the specific cause of cancer remains still to be discovered, numerous theories have been seized on by unscrupulous charlatans who prey on unfortunate sufferers from the disease. All sorts of alleged cancer cures are proffered the poor sufferer or his family by these unprincipled persons, who usually are laymen ignorant of any medical knowledge whatever. The public must be warned constantly that today cancer can be cured only by surgery, the x-rays and radium, and that no other remedy has proved of any real value.

Not always, however, when radium or x-ray treatment is prescribed does it follow that the frightened patient has cancer, for numerous minor ailments are best treated by radiation therapy. Also, cures have been effected in such conditions which, if neglected, might have developed into cancer.

It is of course needless to state that the public must seek medical advice from well trained physicians for, while irradiation is a distinct aid in the treatment of cancer, its use when employed by one not trained by special study and experience in such work may at times cause irreparable harm.

In 1923 the Department of Hospitals of the city of New York, responding to the constantly increasing demands for the care of its indigent cancer sufferers, established a special hospital for the city's needy cancer patients.

In 1929 the Division of Cancer was created in this department to coordinate the work of the several cancer units already established in various municipal hospitals and to provide radiation therapy for cancer sufferers requiring such treatment in other city hospitals.

The heads of this service, while realizing that the most important factor in the treatment of cancer was to coordinate the efforts of all agencies interested in the work, also felt that education of the medical profession constituted one of the valuable activities of any intensive cancer organization. Accordingly, the Division of Cancer associated itself with the large teaching institutions and medical colleges connected with Bellevue Hospital. The primary task of this division has been to provide proper treatment for its patients, but it has also established a research service for providing scientific control of treatments and for aiding in further development.

From a careful study of the foregoing facts the following conclusions may be stated:

CANCER is curable in its early stages.

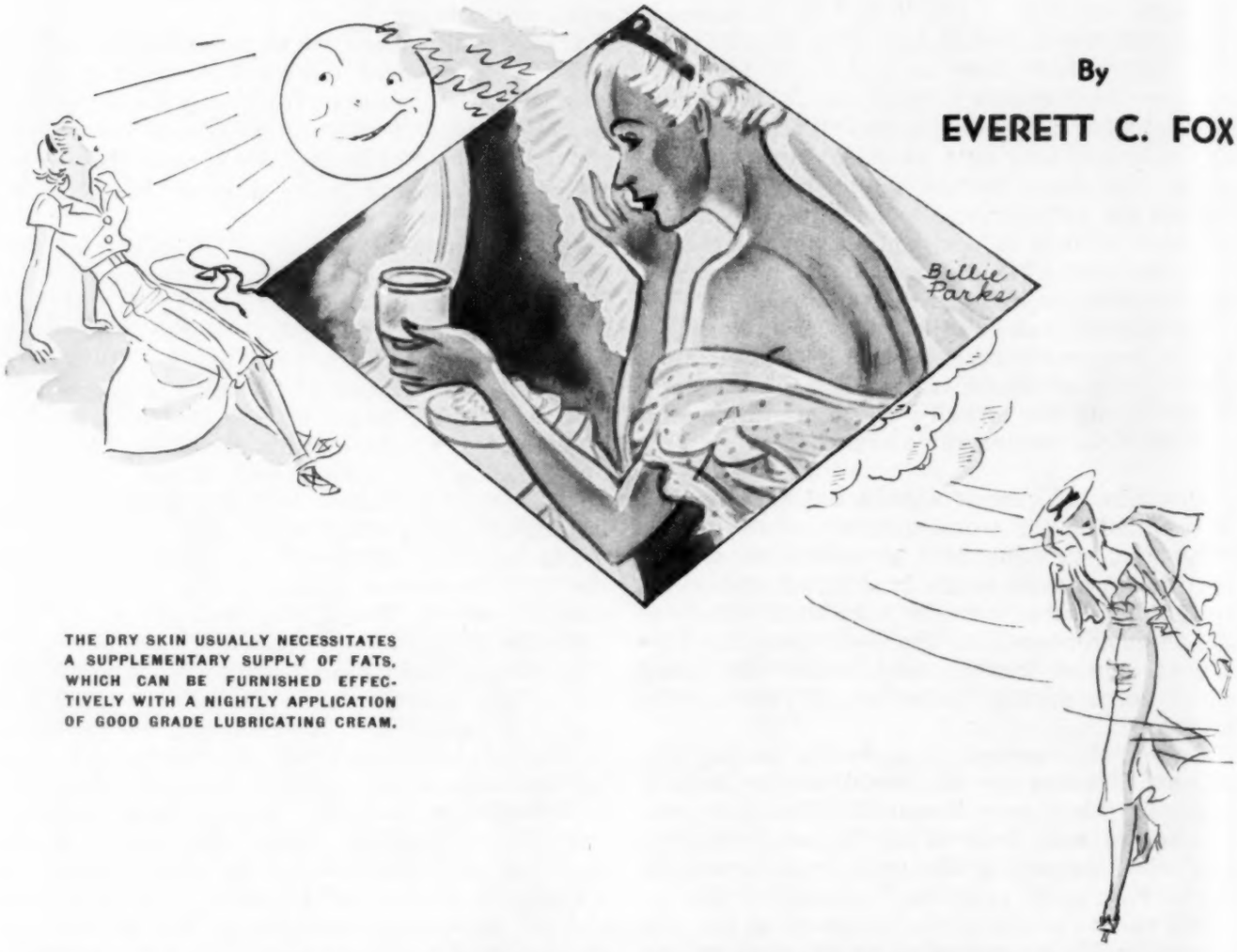
CANCER is neither infectious, contagious nor inheritable.

ONLY surgery, radium and the x-rays can avail in cancer treatment. No other remedy is of value.

EDUCATION of the public regarding cancer is ably carried on by the American Society for the Control of Cancer, which through its programs familiarizes the public with the proved preventive measures to be taken against cancer, supplies authentic information regarding the cause, prevention and treatment of cancer, and safeguards the public against exploitation by quacks and quack remedies.

The Care of the Skin

By
EVERETT C. FOX



THE DRY SKIN USUALLY NECESSITATES A SUPPLEMENTARY SUPPLY OF FATS, WHICH CAN BE FURNISHED EFFECTIVELY WITH A NIGHTLY APPLICATION OF GOOD GRADE LUBRICATING CREAM.

THE SKIN is a highly specialized organ which covers the entire body and becomes continuous with the mucous membrane at various orifices, such as the mouth, nose and eyes. It is the largest organ of the body and has many functions which are necessary to health and even to life. The skin serves as an organ of secretion, elimination, heat regulation, sensation, respiration and absorption and as a covering which gives protection to the vital structures beneath the skin. Because of these manifold functions it is necessarily complex in structure.

The skin consists of two layers, the upper a hornlike protective covering called the epidermis, and the lower a loose connective tissue framework called the corium or true skin, which contains the blood vessels and nerves. The epithelium varies in thickness, being thickest over the palms and soles, and thinnest over the eyelids. Its color is produced by the pigment in the cells of the epidermis, the white connective tissue and the blood in the superficial blood vessels, giving the normal, healthy, pink color.

There are a number of other structures which are special organs of the skin and develop from it. These are the hair and hair follicles, the nails, the oil glands, the sweat glands and the special nerve endings. These structures are referred to as the skin appendages. Their functions are primarily protection, adornment, and the supplying of moisture and oil with which to keep the skin soft, elastic and resistant to external irritants as well as to regulate the body temperature by controlling the surface evaporation.

THE proper diet for the skin is a simple, wholesome, balanced diet. Some skin conditions are associated with overeating, improper digestion, poor elimination and constipation. Oiliness of skin and scalp may result from

indulgence in excessive amounts of fats and carbohydrates.

When the general health is properly maintained the next most important factor in preserving a good complexion is cleanliness. Individual skins vary in the same manner as do hair, eyes and personalities. For this reason not all types of skin react favorably to the same care.

The skin of the average person will do well when cleansed once daily by a bath with the use of a mild soap. The best cleansing bath is one taken in warm water, as its solvent action is greater, and dirt, oily substances and sweat are thus more easily removed. The frequency of the cleansing bath depends on the individual's activities, his type of skin and the climate in which he lives. Excessive bathing produces dryness and irritation, and when continued, results in chapping or inflammation of the skin.

Baths used for purposes other than cleansing are usually taken without soap. A warm bath at bed time is restful and quieting and produces relaxation. A cool or cold bath on arising is invigorating to some persons. Soothing baths may be prepared by the addition of bran, starch, soda and other ingredients. At times, medicinal baths may be prescribed by the physician.

THE face and hands require more frequent washing than the body. The face should be cleansed at least once daily with warm water and a mild, bland soap accompanied by the use of a wash cloth or a soft face brush. A thorough washing of the face is best done at night. Unless the skin is especially oily or is unusually exposed to dirt, the face will not require a second daily cleansing with soap. In the morning the face is bathed in warm water and then with cool water.

Many persons cleanse their hands and bodies thoroughly but imagine that only an application of cream is required for the face. The skin of the face is constantly exposed to extraneous dirt, and there is an abundant fatty secretion. When oils and creams are used as a substitute for soap and water a layer of dirt and fat is accumulated over the face. This is a continual invitation for various disorders of the skin.

The average skin does well with one good cleansing daily, while an oily skin requires two or more cleansings with soap and the application of a drying lotion. The dry skin offers more difficulties. In the more marked cases a superfatted soap, one with an excess of oil, may be used. Afterward, a good cream may be applied and allowed to remain overnight. In the morning the face is sponged with warm water, and a cream may be applied again for use as a powder base. When these measures are not sufficiently corrective a physician should be consulted.

Powders are used on the skin primarily to improve the appearance. They are of value for their soothing, cooling and protective effect, and they may be used beneficially following the bath.

Face powders are used to cover skin defects and to improve the appearance of the skin. They usually contain talcum, magnesium, French chalk and starch or rice powder. In the last few years reputable manufacturers have not used lead, mercury or bismuth in face powders, and only a small number of face powders contain orris root. In some states these ingredients are now prohibited.

PURE cosmetic powders, moderately used, are not harmful to the skin, and they do furnish an appreciable protection from sun and wind. They do not clog the pores unless the skin is excessively greasy, or unless they are used with a greasy combination which may cause the formation of blackheads. This can be avoided by proper cleansing.

The presence of a certain amount of fat in the horny upper surface of the skin is necessary to its perfect condition. Normally this fat is supplied to the skin by the oil glands. The application of fats as ointments or creams is simply imitating and supplementing nature and is superfluous in a normal skin, while the additional supply is advantageous when the skin is dry. Fats applied to the skin act as a lubricant, make the skin supple and soft, furnish a protective coating and remove dirt.

Fats rubbed into the skin do not act as "skin foods." The skin obtains its sustenance from the blood supply, and if ointments and creams are to be nutritious they must be absorbed and assimilated in the same way as those fats which are taken into the stomach and then returned by the blood to the skin. They cannot be assimilated directly by the cells of the skin. Therefore the only way to feed the skin is through the stomach.

SKINS that are harsh and dry require the liberal application of some bland fat, while skins that are oily are not benefited by this application of oil. This fat only adds to the supply already in the oil glands and follicles, or pores, enlarges them and results in the production of blackheads. For this reason, acne is always aggravated by ointments and creams. Contrary to the popular belief, the use of creams does not produce a growth of superfluous hair.

The use of three or four creams is unnecessary. Good results can be obtained from a single cream of good quality. At times, fat-free creams and lotions may be used effectively, especially as a protection from sun and wind and in cold weather.

Acne is an inflammation of the tissues around the oil glands and pores. The pimples or

pustules are really minute abscesses of the oil gland follicles. The primary cause of every case of acne is an excessive secretion of oil with the formation of blackheads. The blackheads are masses of oily or sebaceous material which has accumulated in the follicles or pores and become solidified. These masses act as foreign bodies, irritate the skin, later become inflamed and result in pimples or pustules.

Acne is common during adolescence and early adult life and is the source of great humiliation and mental distress at this self conscious age. The oil glands, hair follicles and other glandular structures develop a new activity at this period. The lesions are usually confined to the face, chest and back. The severity and duration of the condition varies within wide limits. In many cases there are only a few superficial pimples, and the trouble disappears after a few months. In the more severe types the pimples are numerous. Many are deep seated, contain large amounts of pus and frequently persist for years. The deep lesion with pus leaves considerable pitting and scarring. Acne is a most stubborn condition, and all but the mildest cases require treatment by an experienced dermatologist. Weekly treatment with the x-rays is effective in difficult cases. This decreases the activity of the oil glands.

THE local care of the skin in acne consists of a thorough cleansing of the face once or twice daily with soap and warm water followed by hot compresses. The blackheads which can be easily expressed without bruising should be removed, and the face should be sponged with alcohol, after which a drying lotion may be applied. Too vigorous manipulation is not advisable, and this is especially true concerning massage when lesions containing pus are present. All ointments and creams must be avoided since there is already an excess of oil.

Persons with acne will respond to treatment more rapidly if the diet consists largely of fruits and vegetables with at least six or eight glasses of water daily. The avoidance of iodized salt, greasy foods, greasy sauces and gravies, spices, pie, cake, pastry and other carbohydrates in excess is especially important. Constipation should be corrected.

The purpose of the care of the hair is to render it attractive, to keep it clean and to preserve it. These ends are all attained by the same means.

The basis of hair beauty, like complexion beauty, depends on the health of the body. The hair like every other structure of the body gets its sustenance from the blood. If the general health is good and the scalp is healthy the hair will reflect this. The scalp should be pliable and freely movable over the bones of the skull. If the scalp is drawn tightly or constricted by masses of hair or tight hats the blood vessels are constricted and the nourishment to the hair roots is decreased. Massage to keep the scalp freely movable is highly important.

Cleanliness of the scalp is the most important measure in local care. Frequent shampooing is necessary to this since the hair and scalp catch dust, which is concealed and held with the oily secretions, perspiration and scales from the scalp. By weekly shampoo the dirt, dust, scales and grease are removed, and the liability to infection is decreased. Consequently the general health of the scalp and hair is improved.

A LIQUID shampoo is excellent for the hair and scalp. Wet the hair first, and then apply soap, massaging the scalp vigorously with the fingertips. After it is thoroughly cleansed, rinse carefully several times, and let the last rinse be in cool water. Proper rinsing is important in removing all the loosened dirt and excess soap. Dry with towels and later in the sun or with warm air from a drier. When the hair is dry, rub a small amount of oil into the scalp. Then brush the scalp to stimulate secretions of the oil glands and increase the flow of blood.

Superfluous hair, or hypertrichosis, is the term applied to the abnormal growth of hair. Women are particularly sensitive about this condition when it is on the face. It is common in women of middle age, but occasionally it is seen soon after puberty. The only means of permanently and safely removing superfluous hair is electrolysis. A small platinum needle is inserted into the hair follicle, and with a slight electric current the hair papilla is destroyed. When the hairs are not too numerous this method gives good results and is not objectionable. Pulling hairs, shaving or the use of depilatories usually stimulates the growth of the hairs, and they become darker and larger. The best method other than electrolysis is keeping them closely clipped with manicure scissors. At times they may be bleached and made less conspicuous.

THE use of the x-rays for treatment of superflous hair is mentioned only to be condemned. It is distinctly a dangerous method of treatment, and the hair cannot be permanently removed without producing permanent injuries to the skin. These are of course more disfiguring than the superfluous hairs.

Many constitutional symptoms, such as paralysis, blindness and even death, have been reported from the use of a cream which was widely sold for the purpose of removing superfluous hair.

The most essential facts about the care of the skin and hair have been given in this paper, and mention has been made of measures which can be safely used at home. Skin conditions which do not respond to the care as outlined should be under the care of a physician.

How to Follow the Doctor's Orders

By REGINA J. WOODY

IF EVERY mother were equipped to render competent first aid in cases of emergency and were capable of giving the expert nursing care that most doctor's orders require, fewer accidents would result in death and fewer childhood diseases would be followed by lingering illness. But to be able to give adequate emergency treatment one must have some understanding of first aid. Indeed even the simplest type of order snapped out by the doctor over the telephone calls for some nursing knowledge on the mother's part. Who hasn't heard these cryptic demands in rapid, staccato tones: "How much fever? Well, take it by rectum, and call me back if it's over 103. What does the stool look like? Put him to bed. If he has fever give him an alcohol rub. Force fluids, give him a dose of castor oil or a soapsuds enema and keep him quiet. I'll be over about 4. G'bye."

Unless a mother can meet this barrage of questions with equanimity; unless she has some understanding of what the doctor wants done, there is little she can do but call a nurse or wring her hands helplessly. What does a rectal thermometer look like, and how do you use it? What is a stool? How do you give an alcohol rub? How much castor oil is a dose? How do you get a child to take castor oil? How do you prepare, much less give, a soapsuds enema?

If none of these questions make you hesitate, then you are fortunate; for nothing is more paralyzing in illness than to be told what to do and not know how to do it. Fortunately the foregoing demands are really reasonably simple. Any intelligent mother can carry them out perfectly if she has what she needs in the house and knows how to use what she has. It is the doctor's business to give definite orders, not to give a course of home nursing, though all too often he is called on to do both in the midst of busy office hours over the telephone.

Every home that contains children younger than 5 years ought to have a rectal thermometer, a bottle of alcohol, a good dusting powder, a small bottle of castor oil, an ice bag, an enema bag and a bed pan. An emergency shelf is another thing. On it bandages, disinfectant, boric acid ointment, adhesive plaster, absorbent cotton, a few safety pins and a pair of scissors are the necessities. In this article, however, we are dealing only with the simple nursing care of the sick child before the doctor arrives, not with wounds or broken bones.

If you have reason to believe that your child is ill, you should take his temperature before you call the doctor. It is one thing that he must know and that you can really tell him. The reason you take it by rectum is because a true reading is hard to get by mouth before a child is 5 years old. Be sure that the thermometer is shaken down to 96 F. before you insert the bulb. To shake it down, hold it tightly in the right hand, the bulb pointed toward the floor, and strike the right wrist sharply on the left fist.

If a rectal temperature is to be taken the child should be loosely clothed and lie flat on his back. Grease the bulb of the thermometer with petrolatum or cold cream, and slip it into the rectum. Hold it there firmly. Ask the child to cooperate by lying relaxed and quiet. If he does so, you can perhaps read or tell a story until the three minutes are up. It is not in the least a painful operation. Any child will accept the situation with complete equanimity if he is given a simple explanation. You read the thermometer by holding it in your right hand, guiding the silver tip with a forefinger of your left hand and rotating it slowly until you can see the broad silver line. Good illumination, either daylight or electric light, will make the reading much easier. A rectal temperature will be at least one degree above a mouth reading on the same patient, taken at the same time. A normal rectal temperature is 99.6 while that by mouth is 98.6. Remember that, before getting panicky about one or two degrees. If you have no rectal thermometer and must take the temperature by mouth, be sure that the bulb is under the tongue and that the child has not recently eaten or drunk anything cold. Be sure the lips are kept closed and that the thermometer stays in two minutes, even if it is labeled a one minute thermometer. Write down the temperature when you have taken it. It is one of the easiest things about a patient's condition on which to become confused, especially if you have to take the temperature often.

A COMFORTABLE bed is half the battle won, once a child is in it. Be sure the sheets are smooth, that there is not too much covering and that the pillow is plump and covered with a clean slip. If you must use the child's own room and it is wofully cluttered, tidy it quickly by placing toys, ornaments and books in one or two big cardboard boxes, which you can place in the closet. Spread clean towels on the bureau and table, remove heavy or fussy draperies and open the windows a bit for air. Be sure you have one easy chair in the room. See that the light has a dark shade. If the door squeaks, oil the hinges and keep it from slamming by winding

a towel around each door knob, thus holding the latch from catching or permitting the door to bang.

An alcohol rub usually means that the alcohol is diluted half and half with warm water and rubbed on lavishly and let dry by evaporation. Unless the child is desperately ill and the bath must be given in bed, it may be given while he stands on a turkish towel, as this is the quickest and easiest way. If the bath is given in bed, tuck a couple of soft towels beside the child to keep the sheets dry. Do not worry about his shivering or the chattering of his teeth. Both will soon subside, and he will feel much better. Powder lavishly after the rub, slip on clean pajamas, cover lightly, have the room airy but not too starkly brilliant, and be sure the bed is turned away from a glare. Dim a window or light by placing a chair or screen before it. Do not allow loud noises, practical joking or horseplay in the sickroom. The quieter the child is, the more quickly will he be able to return to the workaday world. While he is ill, create a subdued and sympathetic atmosphere in his room. In this detached space he will respond to treatment, obey orders and regain strength with far greater speed and happiness.

If there are unusual things to do, such as gargling or spraying the nose, demonstrate on yourself first. The known has few terrors; it is the unknown that unnerves the little patient. Do not hesitate to allow a tiny taste of nasty medicine. Medicine must be taken. Taking it gallantly, a child will have a sense of satisfaction and accomplishment which may actually aid his recovery. It is sometimes amazing what nauseating doses a child can and will take if he is treated as an adult, allowed to sniff, taste gingerly and then clean up the noxious mess like a soldier. Never force medicine. It is also safer not to try and disguise it. Sometimes castor oil taken in orange juice will cause a lasting hatred of orange juice. First take the castor oil and then the orange juice to cut the oily flavor. Sometimes a bit of sweet may prove a happy ending to a bad dose. Keep the medicine carefully covered. If it is sticky, wipe the bottle with a damp washcloth after each spoonful, to keep it clean and shining. Such a bottle should stand on a china saucer or on a small tray.

If the child is so sick that you must use a bedpan, be sure to have a square of rubber or oilcloth to slip under it, and cover it with a fresh towel when you go back and forth to the bathroom. Keep it near the bed, ready for instant use. Be sure it is immaculately clean and without odor. Soap, hot water and sunshine are the best disinfectants. If a bed pan isn't necessary a commode may be convenient, especially if the bathroom is some distance away, for it will save the child much fatigue. A light shawl protecting him from drafts and chill may be thrown over his shoulders as he sits on the bed pan. If he goes to the bathroom and it is cold, be sure he has on slippers as well as his bathrobe. If he must sit long and looks blue and weary, tuck a light blanket about him and place a little pillow behind his head.

Remember that a good nurse is one who follows her doctor's orders to the letter and makes her patient as comfortable and happy as she possibly can under these circumstances. Don't scold, argue or preach. Just do your best,

A LASTING HATRED OF ORANGE JUICE MAY RESULT IF CASTOR OIL IS MIXED INTO IT, SO IT IS ADVISED TO GIVE THE DOSE BY ITSELF, THEN FOLLOW WITH ORANGE JUICE TO CUT THE FLAVOR.

and expect the child to hold up his own end. He will. A sick child is usually a good child. If, for some reason or other, you cannot manage him, get a nurse in for a day or two. Watch her methods. When she leaves, handle him exactly as she has done. The chances are that he will henceforth mind you like a pajama-clad angel.

Diet will of course be explained briefly and simply by your doctor for your own particular child's case, but if he just says, "force fluids," he means that he wants your child to drink one glass of liquid an hour. He does not care, unless he specifically says so, what those fluids are. They may be milk, water, orange juice, lemonade, ginger ale, or any other pleasantly flavored liquids. There is one pitfall here— don't mix too many different drinks. Stick to one or two that the child likes most and enjoys drinking.

If the doctor says "liquid diet" he means that the liquids your child is to drink must furnish nourishment as well as moisture. Here you have a chance to show your resourcefulness. Rich chicken broth, eggnog, beef broth, potato soup and of course, ever and always, fresh milk and orange juice may be given.

If you are told to serve a soft diet, you must prepare simple foods which are bland to the taste, effortless to chew and swallow, and easy to digest. Such a diet excludes anything that has a pungent odor, such as sauerkraut might have, or anything that might be tough or gristly, as roast beef or ham. Instead you may serve eggs cooked in almost any style, lamb or chicken, fresh young vegetables such as peas or puréed spinach, and white or whole wheat bread. Ice cream, fruit sherbets, sponge cake and lady fingers may be included, but richly frosted cakes, chocolates, ice cream with sauces or any fried meats or those with rich gravies are not allowed.

The regular diet is the diet that the child would eat normally. If he is hungry, feed him well. If he is not, feed small quantities, and choose your foods largely from the soft diet list, making certain that he has nourishing food, even if taken often and in small quantities.

If the doctor orders a soap enema, remember that a bland soap, warm water and the right size tip to the enema bag tube will make the ordeal less trying to the child. The water should feel just nicely warm, not hot, to the hand. It should be thoroughly saturated with soap. If it is an enema for a baby under a year, just use a soft rubber ear syringe, oil the tip, and don't use over 4 ounces of the soapy water. Place the infant on a bath towel in the big tub, with several paper napkins to protect the towel; wrap a diaper about the baby's arms and body, and pin it in place. The whole enema business can thus be disposed of in fifteen minutes, there will be little to clear up, and the chances are that the baby won't even cry. With an older child, give the enema on the bed pan, protecting the bed with a rubber pad or newspapers. Grease the tip of the enema tube; never raise the bag more than 3 feet above the bed, and let the water run in slowly. Be sure that it is actually running out of the tip of the tube, for otherwise you may inject air which in turn will cause rather distressing gas pains. Unless the child is in a cast or very ill, he may be assisted to sit up on the chamber by his bed or on the pan itself, which will greatly facilitate evacuation. Be sure that once he is through, his face and hands are washed, he has a clean suit of pajamas, the bed is smooth and the windows are opened for a change of air. You may sprinkle a bit of eau de cologne or a favorite perfume on his bed sheet, and then have him lie flat for half an hour. An enema may and often does exhaust the patient, but it shouldn't exhaust the mother. So see to it that the child has a rest period afterward and a pleasant cool drink before he is allowed to sit up and play.

If you must do all the work of nursing, including the care of other children, as well as the cooking and cleaning of your home, you will be wise in preparing a bed for the sick child for daytime use in your living room, dining room or even your kitchen if you are so fortunate as to have a roomy old-fashioned one. Just this one thing will save you countless steps and dozens of flights of stairs. If the illness is a long one and you cannot possibly afford help, arrange to make the care of the patient just as easy as possible. Try to leave him for at least an hour a day in some one's care, and get out of the house for a walk or a drive. If you can take in a movie a week, be sure and do so. When you are exhausted sit down and read for half an hour. You must consider your own health, as a sick nurse is almost worse than no nurse at all. If you find yourself rushed and harassed, leave a bit of the housework undone, but don't neglect the nursing or the cooking. During a tedious seige of illness send the other children away for a visit, if possible. Make use of a nearby bakery, even if ordinarily you do all your own baking. Send your clothes to the laundry. Even a wet-wash service can save you a lot of effort. Conserve your own strength in every way so that you may be a competent and cheerful nurse.

Any mother who is clever enough to know and do all the things suggested in this article should consider herself a perfect home nurse; and as such, she is quite sure to have the pleasure of hearing the doctor commend her with the words, "Well, Mother, this young man is getting on nicely. In fact, thanks to your intelligent and careful nursing, he wouldn't have got on one bit better if I'd had a trained nurse on the case."

The Martin Family Vacation

Episode V: HOT WEATHER; SPEED OR RELAXATION?

By Florence M. Bauer and W. W. Bauer

"BUT YOU WILL AGREE IT'S COOLER HERE," SAID MRS. MARTIN. "NOT A DOUBT OF IT," REPLIED HER HUSBAND. "AND YOU DO FEEL RESTED, TAKING IT EASY INSTEAD OF TRYING FOR LONG DISTANCE SPEED RECORDS AS WE'VE ALWAYS DONE BEFORE ON VACATIONS?" SHE ASKED CLOSELY.

CHIMES

MUSIC

INTRODUCTORY ANNOUNCEMENT: STATION ANNOUNCER: ACCORDING TO STANDARD COPY.

MUSIC

DAY'S ANNOUNCEMENT: STATION ANNOUNCER:

Today we see the vacationing family again, this time buzzing along the road toward their next destination. If you have tuned in on these broadcasts before, you will probably remember that they have resolved that their vacation this year is to leave no regrets when they return and get back into the harness for another year's work. They have resolved to slow up and get a real rest instead of taking a vacation which calls for another vacation to recover from the first. They have also resolved that they are not going to be caught napping by the health hazards of the highway, and they have sallied forth prepared to have a good time, and a safe time as well. The family, as you will remember, con-

sists of Mr. and Mrs. Martin, 18 year old George and 15 year old Mary. Listen:

MR. MARTIN: Boy, it's hot!

MRS. MARTIN: Yes, isn't it?

GEORGE: Oh, not so bad. I could stand a swim, though.

MARY: In this sun?

GEORGE: Yes, it wouldn't hurt *my* complexion.

MARY: I'm not thinking about my complexion, if you please.

GEORGE: Huh, it would be the first time you didn't.

MRS. MARTIN: Is it really necessary for you two to argue in this heat?

GEORGE: Well, she started it, didn't she?

MARY: I never did any such thing.

GEORGE: You certainly did—

MR. MARTIN: I don't care who started it. I'm going to finish it right now. You can both stop arguing, or one of you can go back home.

GEORGE: Who's going back?

MR. MARTIN: I can settle that, too. The first one that starts another argument is going back!

GEORGE: What a beautiful view ahead. Have you noticed it, Sister dear?

MARY: Isn't it charming? I'm so glad we came.

MR. MARTIN *(whispering):* That's too good to last.

MRS. MARTIN: I'm sure of that. But it really is a lovely view. My, this heat is just awful.

MR. MARTIN: It's worse up here behind the engine. Why don't you ride in the back seat for a while?

MRS. MARTIN: There isn't room, with all that stuff and the children. Have you the cowl ventilators open?

MR. MARTIN: Yes, but it doesn't seem to help much. Look, the engine is close to boiling.

MRS. MARTIN: I wonder how hot it is.

MR. MARTIN: I was afraid to look. Every time I look at the thermometer on a day like this, I get hotter.

MARY: I looked, Mother, and it was—

MRS. MARTIN: I don't want to know!

MARY: Mother, what about all those hot weather hints you were so busy gathering before we left?

MRS. MARTIN: My goodness, it was so hot I forgot all about them. Let me see. The first thing to do in hot weather is to slow up.

MR. MARTIN: Slow up! I'm only making 30 miles an hour. Haven't you been after me to slow up ever since we left home?

MRS. MARTIN: That isn't exactly the idea, John. It means to let up on activity.

MR. MARTIN: All right, all of you quit grousing about the heat—that ought to be some let-up for a starter.

GEORGE: Why couldn't we cool off by driving faster?

MRS. MARTIN: That wouldn't work.

GEORGE: We'd get more breeze that way.

MARY: Yes, Mother, we would.

GEORGE: Gosh, I must be right, if Mary agrees with me.

MARY: I'm sure you are, Brother dear. *(Whispering)* You big dumb-bell, do you want to start an argument and get sent home?

GEORGE: Aw, he didn't mean it.

MARY *(whispering):* Shut up . . . *(aloud)* I think George is right.

MRS. MARTIN: And I know he isn't. We might feel cooler while the wind lasted, but we'd be more uncomfortable than ever when we stopped.

MARY: It sounded kind of sensible, though.

MRS. MARTIN: I know something better than that.

GEORGE: Gee, spring it, Mother. I'm about to melt.

MRS. MARTIN: We're just coming to a big piece of woods. See, down there at the foot of the big hill where the road curves? There's a creek, too.

MARY: I see it.

GEORGE: Yeah, so do I. What of it?

MRS. MARTIN: We'll just stop there and cool off.

MR. MARTIN: Stop? Why, we spent half the morning stopping.

MRS. MARTIN: Wasn't that the agreement?

MR. MARTIN: Yes, I suppose it was.

MRS. MARTIN: Didn't we agree that we weren't going to drive fast and get all tired out and we weren't going to care how far we went in a day?

MARY: That's right, Dad, we did.

MRS. MARTIN: And that isn't all. Didn't we agree that we were going to stop any place that interested us and stay there till we got ready to move on?

MR. MARTIN: You win.

MRS. MARTIN: Well, that place interests me. Let's take a vote. Mary?

MARY: I say stop.

GEORGE: I say stop. Couldn't get any hotter than we are.

"FIRST WE'LL PUT UP THE DRESSING TENT, THEN THE COTS FOR MOTHER AND ME, THEN THE RUNNING-BOARD TENT-COTS FOR YOU KIDS," SAID MR. MARTIN. "THAT'S THE BEAUTY OF STOPPING EARLY—IT GIVES YOU LOTS OF TIME TO PITCH CAMP."

MR. MARTIN: No matter how I vote, I lose.

MRS. MARTIN: Well, vote anyway.

MR. MARTIN: I thought all the time that would be a nice place to stop.

GEORGE: Can you beat that?

MRS. MARTIN: John Martin, are you trying to kid your family?

MR. MARTIN: Well, you see, I was driving, and I felt kind of lazy, and—here we are. Everything O.K. behind? *(A horn sounds.*)*

MRS. MARTIN: All clear.

MR. MARTIN: All right, here we go. Where shall we park?

MRS. MARTIN: Are we going to camp here?

MR. MARTIN: Suits me.

GEORGE: Then we'd better choose high ground.

MARY: "How to Choose a Camp Ground," by Eagle Scout George Martin.

GEORGE: Well, all right, camp on the low ground next to the river, and give the mosquitoes a treat. I don't care.

MRS. MARTIN: Let's take the high ground and rest for a while before we start pitching camp.

MR. MARTIN: Is that one of the ways to keep cool? How's this for a place to park?

MRS. MARTIN: Fine. *(The motor stops.*)*

GEORGE: And I'm going for a dip.

MARY: I'm first in the car to change.

GEORGE: Well, don't be all week about it. I want to get into the water.

MARY: Five minutes.

GEORGE: I'll duck you three times for every minute over five.

MR. MARTIN: I'm going to take off my shirt.

MRS. MARTIN: I wish I could take something off.

MR. MARTIN: If I were a woman I wouldn't need to take anything off—they wear so little.

MRS. MARTIN: In which they show how much more judgment they have than men!

MR. MARTIN: Is there anything in your hot weather advice about the matter of starting arguments?

MRS. MARTIN: That's the first interest I've seen you take in my hot weather advice.

MR. MARTIN: Well, a man can't afford to have his wife put too many things over without a struggle—even in hot weather.

MRS. MARTIN: But you will admit it's cooler here?

MR. MARTIN: Not a doubt of it.

MRS. MARTIN: And you do feel rested, taking it easy instead of trying for long distance speed records as we've always done before on vacations?

MR. MARTIN: Yup. *(He yawns.)*

MRS. MARTIN: I don't know when I've had so much fun on a vacation. No hustle, no bustle, no mad racing against time to get somewhere and then get right away from there again. *(She yawns.)* Ho—hum! Get me a pillow out of the back seat, will you? I'm going to have a nap.

MR. MARTIN: Right. And I'll be joining the kids in the creek—or I'll be asleep, too.

CLOSING ANNOUNCEMENT: STATION ANNOUNCER:

Now isn't that a real vacation, radio listeners? Can't we get enough of hurry and efficiency and competition and speed in fifty weeks without putting the same mad drive into the two weeks vacation? This family is going to return home refreshed and feeling as if they really had been able to relax and recuperate. Their vacation is going to mean something to them. And that's what vacations are for. Tune in again . . . at . . . for another eavesdrop on the vacation of this typical American family.

MUSIC

CHIMES

Episode VI: CHEAP TREATS AND SAFE CAMPING

STATION ANNOUNCER:

We are still following the vacationing family to see what they find in their vacation to improve their health and what threats against it they may meet as they travel along. Basing their decision on the conviction that a vacation should be a complete change from the ordinary mode of life, they have decided to make it leisurely, their principal object being to escape from the hurry and the drive and the speed which make modern life so hard. They have been sticking to their original intention, too, and have had a wonderful time in consequence. Last time, you heard how they stopped at a cool spot in the middle of a hot afternoon. Here they are, still in the same place. Let's listen:

MR. MARTIN: Well, we've sure traveled far and fast today, I'd say.

MRS. MARTIN: How far did we go?

GEORGE: I'll bet we haven't covered a hundred miles.

MARY: I'll guess a hundred and twenty-five.

MR. MARTIN: What's your guess, Mother?

MRS. MARTIN: Oh, I'll say about a hundred and forty.

MR. MARTIN: I'll guess closer than any of you.

MRS. MARTIN: Yes, after reading the speedometer before we started and again just now. You're good, aren't you?

MR. MARTIN: A fellow has to be, to keep ahead of this tribe.

GEORGE: Say, are we just guessing here, or is there something in it for the one that comes nearest?

MARY: Oh, that's no fair. Dad knows.

MR. MARTIN: Well, I'll be the umpire if Mother will set up a treat for the best guess.

MRS. MARTIN: That's a cheap offer.

MR. MARTIN: Yeah, and if my experience means anything, it's going to be a cheap treat, too.

MRS. MARTIN: Why, John, what a thing to say to your wife!

GEORGE: Dad is right at that. You remember day before yesterday, Dad, when each of us was supposed to treat once?

MARY: I do. I spent my whole day's allowance on that treat.

GEORGE: Sure, you bought us sodas.

MARY: And you bought us barbecues.

MR. MARTIN: And I bought a watermelon.

GEORGE: And what did mother buy?

MRS. MARTIN: Well—er—

MR. MARTIN: She bought—

GEORGE: Let me tell it. You bought—pop corn. That's what Mom bought. Twenty cents worth.

MR. MARTIN: Yes, a cheap treat. No getting away from it.

MRS. MARTIN: Well, that's all that was handy just then. But I'll tell you what we'll do. The one who guesses farthest from the right mileage will treat after supper tonight.

MARY: Aw, no.

GEORGE: Not me.

MR. MARTIN: Why not? That's fair enough.

GEORGE: I spent all my allowance for today.

MARY: So did I.

MR. MARTIN: It's a good thing you kids get your allowance by the day, or you'd have it all spent the first three days of the trip.

MRS. MARTIN: Well, if you're all broke, we'll have to find some other way. I know what we can do.

GEORGE: Come on, let's go.

MRS. MARTIN: The nearest guess wins. And the winner is excused from helping clear up the camp tonight.

GEORGE: Does that include getting firewood?

MARY: And washing dishes?

MRS. MARTIN: Yes, we'll include firewood and dishes, too.

GEORGE: Suits me.

MARY: Me, too.

MR. MARTIN: And if Mother wins—oh, well, all right. We drove a hundred and six miles today.

GEORGE: Hah! I win!

MARY: You do not!

GEORGE: I do too. I said we hadn't traveled a hundred miles.

MARY: That's no fair. I said a hundred and twenty-five.

MRS. MARTIN: My guess of a hundred and forty was pretty far off, wasn't it?

GEORGE: Well, anyway, I was nearest.

MARY: You were no such thing. You didn't even guess any exact distance. You ought to be disqualified. That makes me the winner.

MR. MARTIN: You all lose. I'm the umpire, and as long as George didn't make a real guess, we'll call all bets off, and nobody wins.

MRS. MARTIN: And—we'd better get busy now and pitch camp.

MR. MARTIN: Where shall we pitch it?

MARY: George used to be a Boy Scout—

GEORGE: Say—used to be! Where do you get that stuff? Once a scout, always a scout. Anyway, I'll be a leader before long.

MR. MARTIN: That's all right. And I get what Mary's driving at, too. Let George pick the site.

MARY: Sure.

GEORGE: So she can crab if it doesn't suit her.

MRS. MARTIN: Don't worry. She won't say much. You haven't forgotten that the first one to start an argument goes home?

GEORGE: Oh, boy. Tie that one, if you can, Sis. Well—now—let's see—

MARY: Ah, deep thought. I hope it doesn't hurt!

GEORGE: Dry up, will you, and let a guy think!

MARY: Excuse me.

GEORGE: Yeah. I got it. Right up there under those trees—that is, a little to the west of them, on the slope.

MR. MARTIN: Why, Son?

GEORGE: Well, to begin with, a good camp has got to be on high ground, so it will be dry.

MR. MARTIN: Yes.

GEORGE: And I'm putting this on the west slope so we won't get the sun too early in the morning.

MR. MARTIN: Suits me. I'm no early bird.

GEORGE: And not right on the crest of the hill—

MRS. MARTIN: Why not?

GEORGE: So we won't get the full sweep of the wind.

MR. MARTIN: But won't water run into the tents if it rains?

GEORGE: Not when I get through. There's to be a little trench in the ground above each tent and leading around it. The water will run into the trench, around the tent, and down the hill.

MR. MARTIN: Good stuff.

MARY: It's an awful long way from the well.

GEORGE: Aw, I'll help you carry water. It's got to be up there, away from the mosquitoes. If we pitched down near the water we couldn't stay there.

MRS. MARTIN: I don't want a lot of mosquitoes around.

MR. MARTIN: Oh, there'll be some, but the netting will take care of those. George is right. The higher up we get, the more breeze, the fewer mosquitoes.

GEORGE: Yeah, a feller has to be right once in a while, even if he has got a sister.

MARY: Anyway, you said you'd help carry the water, didn't you?

GEORGE: Sure. That's no job. How about a little help from you on firewood?

MARY: Y-e-s-.

GEORGE: Don't bust anything in the rush, will you?

MR. MARTIN: Come on, now, we've got the location all picked. Let's get going and pitch the tent. First, we'll put up the dressing tent; then the cots in there for Mother and me, and then the running board tent-cots for you kids.

MRS. MARTIN: What about my fire? How am I going to cook?

MR. MARTIN: Lots of time for that. That's the beauty of stopping early. Gives you lots of time to pitch camp.

MRS. MARTIN: Well, it's all right with me. But you fellows don't eat till I get a fire. I'll cook, but I won't gather wood.

GEORGE: What about the gasoline stove?

MR. MARTIN: We'll use that when there isn't any wood. But there's plenty of fuel here, so let's get going on the tents, and then we'll eat. It seems to be getting cooler.

CLOSING ANNOUNCEMENT: STATION ANNOUNCER:

And so, with a camp site properly selected, on high ground, away from the early morning sun, far from the mosquito-breeding creek, the vacationing family ought to be comfortable. Certainly they haven't had a hard day of it. And that's the way vacations ought to be spent. Tune in again . . . and hear what happens when they begin to think about the well—which they should have considered before they pitched their camp.

MUSIC

CHIMES

Episode VII: KEEPING WELL ON WELL WATER

STATION ANNOUNCER:

In the last sketch, if you have been following this series on how to *(Continued on page 641)*

The Preschool Child Who Misbehaves

MANY children dress themselves, go to sleep at bedtime, eat the food which is served, value their books and toys, and are sociable. Such children behave. Others refuse to eat or dress, have temper tantrums, vomit, wet the bed, destroy toys, bite their nails, and strike the baby. They misbehave.

Such misbehavior has a reaction not only on the child himself but on his neighbors' children. He becomes ill mannered, unsociable, quick tempered and highly neurotic. As a result his playmates suffer. It is this unhealthy reaction on other children which must be strongly emphasized.

A child misbehaves in order to attain an object or as a protest against some injustice. He vomits his breakfast or blinks his eyes because he chooses not to attend school. He wets the bed and refuses to eat, sleep or dress since the baby is getting all the attention. He develops facial contortions and declines to play outdoors after a broken promise. Biting his nails, playing truant and striking children are methods of focusing attention on himself. In short, his misbehavior is purposeful and well planned.

Most cases of misbehavior develop because of a neglect of attention to details. The failure to recognize a bad habit or disregard of its beginning; inability to prevent or cope with situations as they arise; the refusal of parents to concede a personality to their offspring, and the ease with which parental promises are made and broken are all causes of child misbehavior. The timely substitution of healthful activities for

By
MORRIS GLEICH

Doris E. Wright

LEARNING TO EAT AT THE AGE OF 2 YEARS IS PART OF THE PROGRAM OUTLINED IN THE ACCOMPANYING ARTICLE ON CORRECTING A CHILD'S BEHAVIOR.

Ewing Galloway

CONSIDER THE CHILD AS A PERSONALITY, AND TREAT HIS LIKES AND DISLIKES WITH RESPECT.

bad habits; the careful arranging of a day's schedule; the thoughtful planning of menus; the buying of books and toys which have definite educational values, and the choice of friends from among well groomed and well behaved children are details which cannot be underestimated in controlling and preventing misbehavior.

Some parents insist that children outgrow their early bad habits. This is untrue. Witness our reformatories full of children who were allowed to grow up without guidance, in fact without parents.

Striking or frightening children into good behavior is another policy pursued by some parents. Such methods are indications of their inability to raise children properly.

Let us consider one form of misbehavior: refusal to eat. This manifestation is bound up with feeding habits, nutritional requirements and esthetic, psychologic and medical aspects of foods.

A young child should not eat with his parents. Small wonder that he misbehaves when food which he sees is denied him. He must eat slowly and chew his food well. Eating when hot, tired or excited is bad. Washing the hands before eating is important. A rest before and after a meal, regular eating periods and no food between meals are most essential items. A child should be taught to feed himself at the age of 2 years. He must be allotted a definite time in which to finish a meal. He may not engage in any other activity at that time.

A meal must be well balanced, including sufficient proteins, fats, carbohydrates, salts, vitamins and water. It should be simple, wholesome and nutritious. These requirements make for proper growth and development.

Foods should be well prepared. Insufficiently cooked cereals, tough meats and poorly seasoned vegetables and soups cause outbursts of temper at mealtime. Foods can be attractively served. A refusal to eat is encouraged when eggs prepared in the same way are offered repeatedly; when the child's plate is too full; when food is served too hot or too cold, or when

too much milk is added to the cereal. A little effort will make mealtime a happy occasion.

Coaxing, whipping, bribing or showing emotions should be tabooed at mealtime. Telling stories or reading books in order to induce a child to eat is poor policy. Forcing food on a child is wrong. There is sufficient variety, so encourage a wide choice. Repeating the same foods depresses the appetite. When a child refuses a new food, put it away and offer it again a week later. Give small amounts of a new food, and don't repeat it too often.

When a child is chronically ill because of diseased tonsils and adenoids, infected sinuses or carious teeth the remedy is evident. When children have no appetite because of overfeeding or constipation treat the cause.

Some children get a skin rash or vomit when they eat certain foods. This happens with egg white, beef juice, fish and cereals. To insist that a child eat them is unwise.

One pint of milk a day, after the first year, is sufficient. Milk does not contain all the elements necessary for growth and development after the first year. Mothers who are thankful because the child takes plenty of milk, to the exclusion of other foods, soon find that the child becomes pale and flabby, with a distended abdomen and no appetite. Too much milk takes away the desire for other foods. It thus deprives the child of minerals, vitamins and forms of protein needed by him.

Adding cream or butter to many foods in order to fatten a child is a bad practice. Mothers should realize that no amount of fattening will help the child who is destined to be tall and thin.

Clear broths should be avoided. They take away the appetite for more valuable foods served later. Large amounts of sugar and starchy foods crowd out a well balanced meal, producing a distended abdomen, with cramps and frequent bowel movements. The child who eats too many sugary, starchy foods is liable to be pale, to have flabby muscles and to be subject to frequent colds.

Refusal to eat is not a simple problem. To solve it one must have knowledge of nutritional requirements and appreciate the esthetic, psychologic and medical aspects of foods.

Definite problems are presented by the neurotic child. He not only refuses to eat but also disdains to dress, play or sleep. He is a bundle of bad habits. Usually the only child in a family, he is spoiled by too much mothering or grandmothering. He is a tyrant. He destroys toys, strikes other children, wets the bed and remains constipated in order to gain attention and be the center of all family life. The more anxiety his parents show, the happier he becomes. He frequently vomits his breakfast in order to absent himself from school. He misbehaves to stay in the limelight. Sometimes it becomes necessary to remove the child from his parents. This method is frequently the only one and works well. A neurotic child must have his entire routine changed. The person in charge must be firm, just and practical.

Let us consider some problems in the child's daily routine. What shall we do when he refuses to eat? Food is placed before him. He is instructed to eat. After a given time all food is taken away. Nothing is said. No one pleads, sings, tells stories or promises toys or money. Nothing is given between meals. At the next feeding time the same food is served. In the evening the child is put to bed, the lights are extinguished and the door is closed. After all his wants have been taken care of, no attention is paid to his many requests for a drink, food or toys. The same attitude applies to his waking, dressing and playing. When he realizes that the world does not revolve about him, that his parents are not concerned with his refusal to eat or with other tantrums, he will behave. Such children are not cured by a prescription for a tonic or by one visit to a doctor's office.

The neurotic child should not be taken to the movies, fatigued by long automobile trips or kept up late. He should get plenty of fresh air and exercise. Being a bright child, as a rule, he should be allowed certain responsibilities, such as helping to choose his toys and clothes and arrange his room. Give him an interest in something. Let him paint, model, collect stamps or keep a scrapbook.

Consider your child as a personality. He has likes and dislikes. He possesses rights and privileges inherent to childhood, which you must respect. Develop the personality in your child through suitable tasks. Make no promises you don't intend to keep. Gain his confidence by cooperation. Coercion always spells failure.

The conscientious mother will find no difficulty in raising children if she prepares before the baby arrives. It is important that she understand the physical and mental sides of her child. She must attend lectures and read good books on the care of children. All this knowledge must then be mixed with common sense. When baby is born mother is well prepared for her task. Instead of the perpetual battle between mother and offspring regarding overeating, sleeping and dressing, there is harmony. In fact the mother soon realizes that she really has a little time for herself.

No parent is justified in giving to society an offspring who is a social misfit and who by his bad habits adversely affects the lives of others. Parents have no right to pass their responsibilities on to others. Remember your child is not abnormal; he only needs proper training. Prepare yourself for him so he may receive the correct guidance from the start.

The Language of the Heart

An Article on the ELECTROCARDIOGRAPH

By

GEORGE A. SKINNER

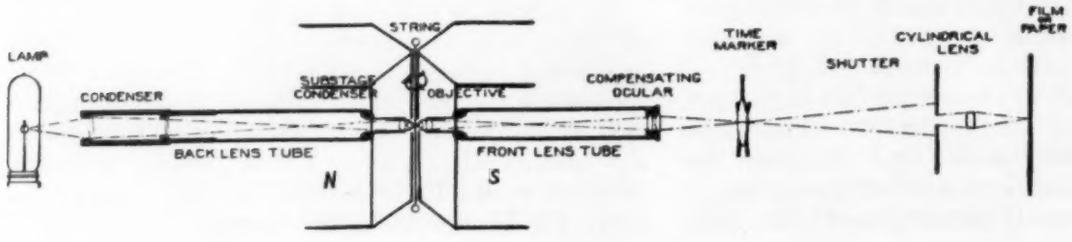
THIS IS not a sentimental story but an account of a scientific instrument that now makes it possible for the heart to write its own record. The language it writes, however, is not easy to read; and like the hieroglyphics that record the interesting events of ancient civilizations, it must be deciphered by those who have devoted much study to the language. The story written by it is so instructive and useful in determining the efficiency of the heart that it has become one of the most important means of diagnosis and prognosis in cardiac conditions. Indeed the angles and curves, the timing and height of the lines written by the heart may be the evidence that makes or mars happiness. While the story alone which the heart writes does not make it possible to draw a definite conclusion, this written record combined with other known facts results in a complete account of the action of this important organ. If the message is promptly and accurately read it is often the means of greatly prolonging life and frequently prevents an early breakdown of the mechanism that has failed to make itself completely understood by other means.

YEARS ago it was known that a frog's heart produces in contraction an electric current, but this knowledge was of little use at the time. The human heart also produces a tiny current, but it has been estimated that all the electricity produced in two centuries of constant beating would be only enough to light the bulb of a hand flashlight for about a second. The fact that such infinitesimal currents can now be measured is marvelous and indicates the great skill of our scientists. It was the genius of Einthoven that produced the string galvanometer, by which it became practical to make use of the currents generated by the human heart muscle.

The description that Einthoven himself gave at the time he announced his discovery is so clear and definite that it leaves little to be added. He remarks, "The essential part of this instrument—the string galvanometer—is a thin silver coated quartz fibre, which is stretched like a string in a strong magnetic field. If an electric current is led thru this fibre, the fibre shows a movement that can be observed and photographed by means of considerable magnification. . . . It is possible to regulate the sensitivity of the galvanometer very accurately within wide bounds by tightening and loosening the string."

THE string galvanometer is so sensitive that the heart currents cause an appreciable deflection of the string. This deflection indicates the direction and to some extent the strength of the current which the heart is generating, and the record of the current may tell the condition of the heart. To make the deflections visible and useful they must be magnified and recorded. This is done by a system of lenses which projects the magnified movements of the string onto a photographic film, or paper, contained in a delicately constructed camera. The exposed film, developed in the usual manner, thus shows the cardiac story. This message then enables its reader to determine accurately whether or not abnormal conditions of the heart exist. Its great value is of course evident.

In order to make a record of the heart's action two things are necessary: first, the electrocardiograph, and second, a skilled interpreter. Both conditions can now be readily met, for cardiographs are quite common in all large cities and in many smaller ones. Moreover, cardiology is rapidly becoming a specialty. Accordingly there are physicians in many of the larger hospitals who devote their entire time to



THE STRING, A SILVER COATED QUARTZ FIBER, IN THIS GALVANOMETER IS STRETCHED IN A MAGNETIC FIELD, AND ITS VIBRATIONS ARE MAGNIFIED AND RECORDED.

the study of the heart and circulation. The infinite variety of records made by the cardiograph require much study for proper interpretation. Only after thousands of cases have been studied and the cardiographic records compared with postmortem observations in known clinical cases has the present knowledge been evolved. This knowledge has been augmented by innumerable animal experiments, until now the story of the heart may be accurately read, regardless of how unusual it may seem at first.

Until recently three leads, or connections, were used to connect the patient to the machine. These are metallic and are attached to the wrists and left ankle.

Number one lead records the current as it passes through the heart from one wrist to the other; number two, from right wrist to left ankle, and number three, from left wrist to left ankle. Thus the current takes a different path through the heart in each of the three leads and therefore writes a slightly different story in the record from each lead. These written records vary even when hearts are perfectly normal, since the physical build of the person may alter the position of the heart in the body. If the man is tall and slender his heart will probably be nearly vertical, while the short, heavy man will have his heart in a more horizontal position. These and many other facts are considered in reading the cardiogram, as the written record is called. Usually three leads are regarded as sufficient, but in some obscure cases a fourth lead through the heart from front to rear is taken. More recently multiple leads have been used, even up to nine or more. It is contended that the story thus written is much more complete, often showing damages that the usual three, or even four, leads fail to reveal. Work is still going on to determine the additional value of a greater number of leads.

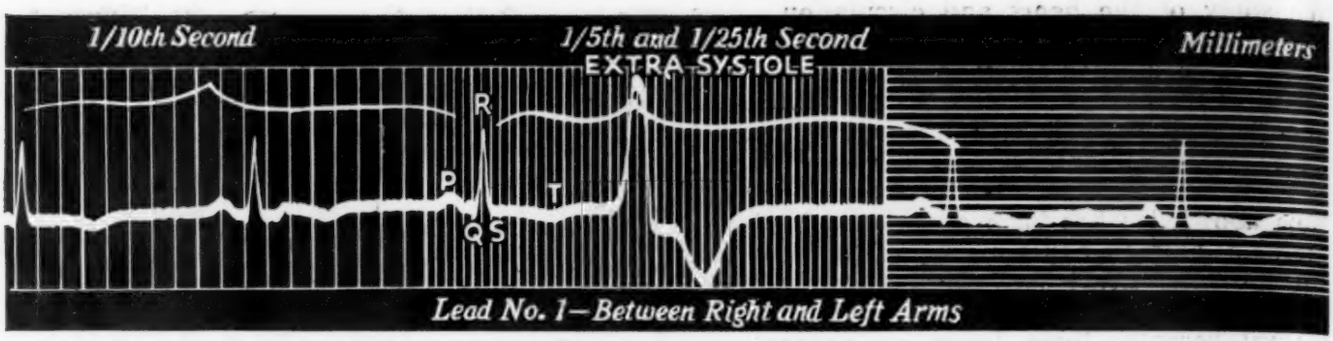
A TO B CONNECTION RECORDS THE CURRENT AS IT PASSES BETWEEN THE TWO WRISTS; A TO C, FROM THE RIGHT WRIST TO LEFT ANKLE, AND B TO C, FROM THE LEFT WRIST TO LEFT ANKLE. D IS THE CABLE THAT LEADS TO THE RECORDING CARDIOGRAPH.

THE cardiographic record is of the greatest value in borderline cases. It is of particular importance in determining "murmurs," certain unusual sounds heard on examining the heart with a stethoscope. A cardiogram with an x-ray picture of the heart makes diagnosis much more accurate than was formerly possible.

Perhaps if the actual production of cardiograms and their interpretation are followed as in daily practice, it will make the process more easily understood. Only the more striking details of these cases will be considered. Although thousands of variations do occur these records usually fall into quite definite groups.

As the work of making the cardiograms is routine and may be readily mastered, technicians are often trained to do this part of the work, relieving the heart specialist of this duty. Various mechanical devices are used in applying the electrodes, but in principle they are all the same. Efficient contact between the body and the machine must be secured, whatever method is used. Often if a large number of cases are examined a permanent chair and contacts are provided. But most of the modern instruments are readily portable and may be taken to the bedside.

The permanent installations usually have some type of chair, fixed in place, and three receptacles containing metallic plates in salt solution, from which the wires pass to the cardiograph. In these receptacles the two hands and left foot are placed. Or perhaps clamps, usually having pads wet in salt solution, are slipped around the wrists and left ankle, in contact with the bare skin. Certain muscular electric currents are always produced when muscles contract; therefore it is essential that the person undergoing examination is as relaxed as possible. Skin resistances are present, and these are compensated by slight adjustments in the machine. Usually the first question asked by the patient is "Will it hurt?" There is abso-

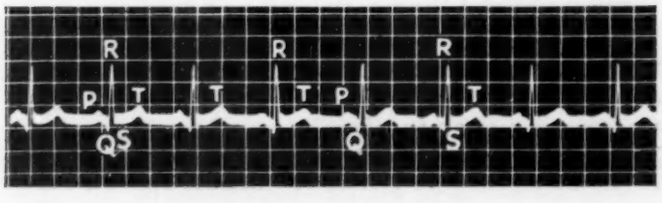


THE EXTRASYSTOLE SHOWS THAT AN IMPULSE HAS STARTED A BEAT OUT OF TURN, THE STRING RECEIVING AN UNUSUAL CURRENT. HOWEVER THE NORMAL RHYTHM IS QUICKLY REGAINED. NOTE THE ABNORMAL T DEFLECTION.

lutely no sensation to the process, and except for the deflections of the string or mirror, there would be no consciousness on the part of any one that an important process was in action. When necessary preliminary adjustments have been made the operator turns the small handpiece and successively takes the current from leads one, two and three. If more leads are to be used the same process is continued with electrodes from different parts of the body. Usually only three are taken, but if more seem essential they may readily be made. Generally a single sitting is sufficient; but if the patient comes from a long distance or is difficult to reach in case of failure, it is well to wait until the film is developed before allowing him to depart. Usually the entire morning's film is developed at once, and the results are read by the specialist the next day.

To facilitate reading, the cardiograms are mounted on cards on which timing marks are printed. These timing marks are usually in fifths and twenty-fifths of a second. The fifths are indicated by wider lines. Many cardiologists now omit the finer lines and use only the fifth-seconds. If photo paper is used these marks are usually photographed from a timing device on the machine, which operates at the time the cardiogram is made.

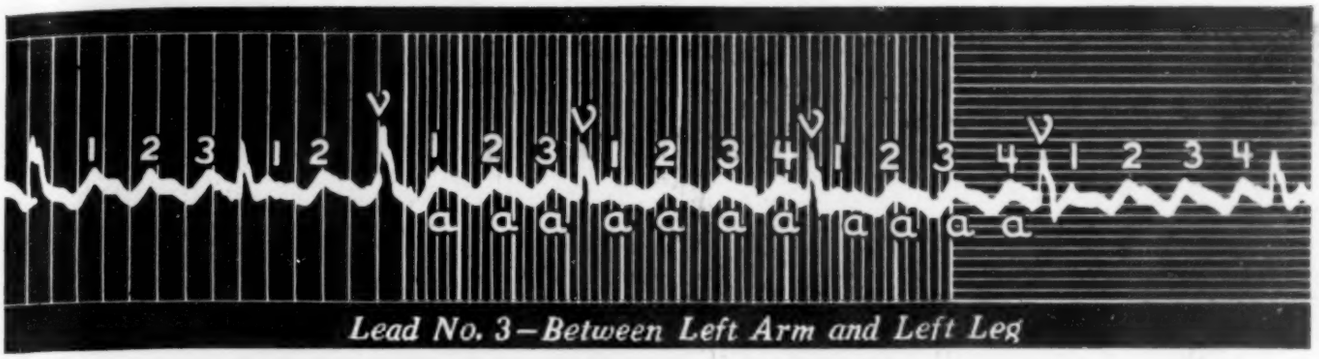
The spacings between the peaks are first measured to give the timing of the pulse and to determine whether the heart's action is regular. At the beginning of the cycle the auricles contract, and this is called the "P" wave; next there is a slight depression, the "Q" wave. Then comes a very sharp up stroke and quick return, the main action of the ventricles, the "R" wave. The next one, the "S," is often scarcely noticeable. The last part of the cycle is the "T" wave. Other letters have been added, but these are the usual ones. Normally these waves point up in all three leads, but occasionally one will find some part of the tracing down in the third lead. However, if occurring only in that lead, it is not generally regarded as abnormal. If the tracing corresponds to those of thousands of others in whom no clinical symptoms have been observed it is reported as "normal."



THIS IS A NORMAL CARDIOGRAM, TAKEN FROM LEAD ONE. NOTE THAT THE SPACING OF THE VARIOUS PEAKS IS UNIFORM. EACH HEART BEAT DUPLICATES THE OTHERS.

Sometimes some queer tracing occurs that would startle the novice very much. The heart has a little bundle of nervous material at its base which normally starts all the impulses that produce contractions in the heart muscle. This is called the "pacemaker." Sometimes impulses start in other places and so set up contractions out of the regular timing, known as "extrasystoles." These make most peculiar marks, as though a person in tracing a line had suddenly had his hand jolted. They may go either up or down, depending on where the unusual stimulus started. Many of the so-called "irregular" hearts are of this class. When the cardiogram containing these extrasystoles is read it will be found that the timing quickly resumes its normal rhythm, and although the extra beat may be too soon or too late, the next one is in regular sequence. These off-time beats occur in perfectly normal hearts; but usually some abnormal chemical reaction of the body accounts for them, and a correction of this condition restores the normal rhythm. While these extra beats may occasionally be found in normal hearts, they are frequently found in "sick" hearts.

The electric impulses normally originate in the pacemaker and follow definite paths. When this is the case normal cardiograms result. If the heart muscle is diseased these pathways may be more or less interrupted, like an overgrown trail through the woods, and passage may be thereby much slowed or entirely stopped. This necessitates finding another way round. The same thing happens in the heart currents. This condition is known as "heart block" and may be partial or complete. The impulses start normally but are more or less completely obstructed in their attempts to pass over the usual route.



THIS CARDIOGRAM ILLUSTRATES A PARTIAL HEART BLOCK WITH AN AURICULAR FLUTTER. OTHER ABNORMALITIES ARE INDICATED IN THE TWO, THREE OR FOUR PEAKS OF AURICULAR CONTRACTION TO ONE OF THE VENTRICLE; ALSO THE NOTCHES IN THE VENTRICULAR WAVE INDICATE THAT OTHER CURRENTS ARE AFFECTING THE NEEDLE.

This causes the upper part of the heart muscle, the auricles, to contract normally; but the lower part, the ventricles, fails to get the signal, so remains quiet until an impulse finally gets through either by the regular way or from some other trail. At last it contracts, but this may be entirely out of time with the auricles, and trouble in maintaining the circulation results. Sometimes the auricles will beat two, three or four times before the ventricles contract. Under such conditions, if the ventricles respond with fair regularity it is usually spoken of as "partial block."

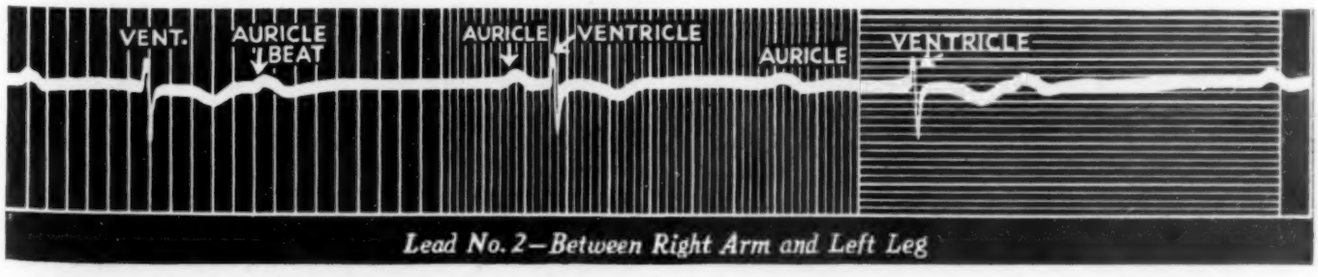
If the ventricles fail to get signals from the pacemaker at fairly regular intervals, they will usually start working independently from impulses started within themselves. This is a marvelous factor of safety, and while it results in an extremely inefficient cardiac action, it will maintain life for some time. Often by proper rest and treatment normal rhythm can be restored. Because of its immense reserve power this wonderful organ often continues to function under the most adverse conditions and to make repairs while doing so. A cardiac case is never to be considered really "hopeless" until the heart has actually stopped beating for a number of seconds.

The cardiograph alone will not tell the whole story, and a careful clinical examination must be made in connection with it, together with a history of the case. The history must always be taken into careful consideration, as it is most important.

If cardiac damage is suspected a complete physical examination, the history, the cardiograph and the x-ray examination will determine accurately the condition of this most important organ. Sometimes the clinical symptoms are suggestive of permanent heart damage. Such symptoms may be much exaggerated by the belief that heart disease is present. Quite frequently symptoms which have been attributed to the heart are not due to an organic lesion but may be entirely functional; that is, the damage is not of the muscle, but there is temporary disorder in the control mechanism, and like a motor out of time, it can be readily corrected. Many people have been made miserable and some have been completely invalided by belief that the heart was damaged, when this was not the case.

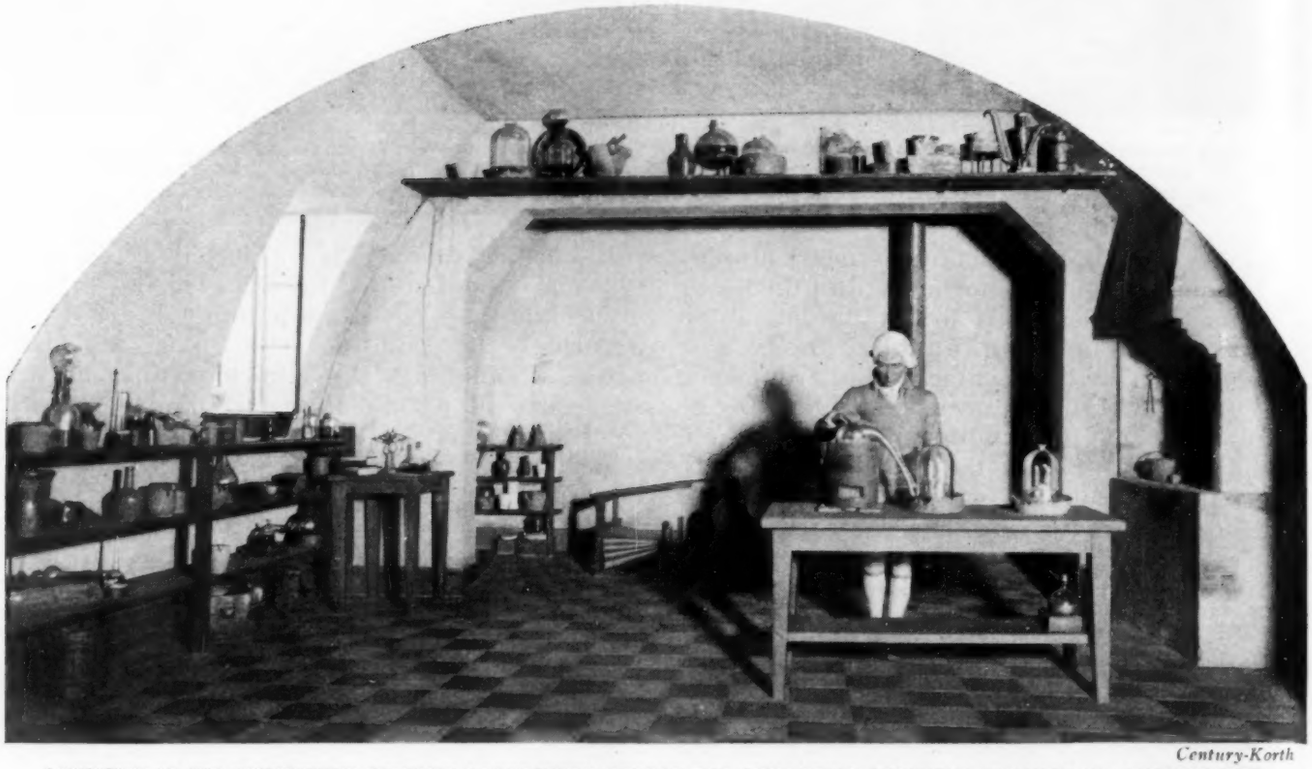
However, if there is definite damage to the heart it is important for it to be known, in order that a proper modification of the ordinary habits may be made to meet the needs. The cardiogram will do much to decide this point definitely. Often slight changes in the daily routine will permit a very comfortable and useful life over a long period.

Not only is the language of the heart a fascinating one to master, but it is exceedingly useful to the community. In this day when deaths due to cardiac diseases appear to be constantly increasing, it is essential that every known means of combating be employed. The story the heart tells will prove to be invaluable in this fight.



THE STORY OF A COMPLETE HEART BLOCK IS TOLD IN THIS CARDIOGRAM. THE VENTRICLES ARE WORKING ENTIRELY INDEPENDENTLY OF THE AURICLES. BOTH ARE QUITE SLOW AND INDICATE A SERIOUS CONDITION.

The Gases of the Air in Medicine



Century-Korth

LAVOISIER IN HIS EIGHTEENTH CENTURY LABORATORY BEFORE THE GUILLOTINE ABRUPTLY FINISHED HIS EXPERIMENTS.

By

ALVAN L. BARACH

IT SEEMS easy to take a breath of air. Most of us do so without thinking why we breathe or of what the air itself is composed. Of all the functions in the body of which we are conscious, breathing is usually the easiest, and yet it is the one most necessary to life itself. However, there are times when some of us draw our breath with the greatest difficulty, when we say we are very "short of breath." What is the cause of being short of breath, and how is the ease of our breathing restored?

During the early history of the human race, air was considered one of the four elements of which the world was composed, the other three being earth, fire and water. Air was thought to be an indivisible entity, a thing of itself, as the child of today believes it to be. The ancients believed that air contained a spirit, and then the first great scientist that the world had known, Aristotle, 350 B. C., pointed out that animals kept in air-tight boxes soon died. He explained this as due to their inability to cool themselves. It is true that one of the results of breathing is to get rid of heat by evaporation of water from the lungs, but Aristotle was unable to divine the essential reason that causes man to breathe.

HOWEVER, for 2,000 years, scientists continued to believe that the object of breathing was to cool the fiery heart; and then 275 years ago, there came along a young Englishman, Robert Boyle, who argued that air was not a simple substance but contained many things that came from the earth and from the stars. He realized that air was necessary for fire, but he made the mistake of believing that this was due to some peculiar substance coming from the sun or from the stars, which he called phlogiston. His own words are of interest: "The Schools teach the air to be a warm and moist element, and consequently a simple and homogeneous body. Our atmosphere, in my opinion, consists not wholly of pure aether . . . but . . . of numberless exhalations of the terraqueous globe. . . ."

Boyle was much interested in combustion, and elsewhere he remarks, "The difficulty we find in keeping flame and fire alive . . . without air renders it suspicious that there may be dispersed thro' the rest of the atmosphere some odd substance, either of a solar, astral, or other foreign nature; on account of whereof the air is so necessary to flame."

In 1628 another Englishman, William Harvey, demonstrated that the heart circulated blood and not air, as was formerly thought, and in 1670 John Mayow showed that the dark blue blood of the veins became converted into the scarlet red blood of the arteries by taking up a substance from the air which he named the "nitro-aerial spirit."

In 1775, just 160 years ago, Joseph Priestley published the first account of the preparation of oxygen. He heated the red oxide of mercury and collected the oxygen that came off. Priestley was an Englishman who was a teacher, a writer and a pastor before he fully devoted himself to chemistry. The too liberal nature of his democratic views on government cost him his Fellowship in the Royal Society. His house in Birmingham was burned, and finally he left England and came to America in 1795. He lived not far from Philadelphia, where he died in 1804. Priestley's remarks on the discovery of his "good air" are characteristic of his engaging personality: "My reader will not wonder that, having ascertained the superior goodness of dephlogisticated air by mice living in it, and the other tests above mentioned, I should have the curiosity to taste it myself . . . I have gratified that curiosity by breathing it, drawing it through a glass syphon, and by this means I reduced a large jar full of it to the standard of common air. The feeling of it to my lungs was not sensibly different from that of common air, but I fancied that my breath felt peculiarly light and easy for some time afterwards. Who can tell but that in time this pure air may become a fashionable article in luxury? Hitherto, only two mice and myself have had the privilege of breathing it."

Despite Priestley's discovery of oxygen he failed to appreciate what he had found, calling it "dephlogisticated air," or, in other words, air in which the phlogiston, or the spark which was thought necessary for combustion, was removed. It is difficult to see how he failed to grasp the significance of his discovery except as one realizes that for a hundred years it had been assumed that some "nitro-aerial spirit" was necessary for combustion.

Another Englishman, Joseph Black, had already discovered carbon dioxide, but it remained for the brilliant French scientist Lavoisier, in work done between 1775 and 1794, to interpret correctly the experiments of others as well as his own. He showed clearly that in breathing, oxygen is absorbed through the lungs, burned in the body in the same way as a fire burns material substances outside the body, that carbon dioxide and water are given off in exhalation and that an inert substance in the air, nitrogen, is unchanged.

Lavoisier was engaged in experiments on perspiration as an accessory form of respiration when he was guillotined in 1794. His request that his life might be prolonged until he had compiled a statement of his results was refused. It is of considerable interest to realize that Priestley's discovery of dephlogisticated air stimulated Lavoisier to clarify the chemistry of breathing. Priestley's own words are: "Having made the discovery some time before I was in Paris, in the year 1774, I mentioned it at the table of Mr. Lavoisier, when most of the philosophical people of the city were present, saying that it was a kind of air in which a candle burned much better than in common air, but I had not then given it any name. At this all the company, and Mr. and Mrs. Lavoisier as much as any, expressed great surprise."

When oxygen was discovered physicians were everywhere excited and aroused, and it was soon to be used as a cure for all kinds of diseases. Thomas Beddoes established in 1800 a Pneumatic Institute at Bristol where he treated not only heart disease and asthma but also opium poisoning and melancholy. He made breathing bags and face pieces of oiled silk, but the technic of administering oxygen was far from adequate to provide success in his attempts to aid the sick; his ambition to cure disease was too all inclusive.

During the hundred years from 1800 to 1900, numerous practitioners of medicine and scientists added information concerning the purpose of breathing. But the use of oxygen failed to gain a firm hold. Finally, two English physiologists, J. S. Haldane and Joseph Barcroft, in 1910, became prominent in their exposition of the rôle played by oxygen in the body, and Yandell Henderson in this country revealed the importance of carbon dioxide. Haldane and Barcroft each lived in chambers in which the oxygen of the inside air was reduced 15 to 25 per cent, simulating a condition on tops of high mountains where the pressure of oxygen is decreased because of the thinness of the air. Both of these investigators revealed how sick they became when the oxygen in their arteries was thus reduced. Barcroft for five days suffered from nausea, headache, visual disturbance, rapid pulse and lassitude. Haldane's pulse beat as high as 132. He almost lost his life, because his mind became disoriented and his directions to his assistants, had they been followed, would have ended in his death. These experiences of the harmful effects were followed by the knowledge that similar degrees of oxygen

deprivation occur in pneumonia and in heart failure, in new-born infants, in gas poisoning and in a variety of illnesses in which either the capacity of the lung to provide oxygen or the capacity of the heart to circulate it has become damaged.

The ground was thus laid for the modern use of oxygen. The chambers of Haldane and Barcroft were followed in 1920 at the Rockefeller Institute by an oxygen chamber and at the Massachusetts General Hospital in Boston by the development of simpler but effective methods of administering oxygen through the mouth and nose. This work was carried on at the Presbyterian Hospital, New York, where effective air conditioned, ice cooled oxygen tents were developed, in which the head and chest are enclosed by a canopy largely composed of transparent fibriloid. The patient has a free view to the outside; the air is half composed of oxygen; the heat, moisture and carbon dioxide which he exhales are removed, and he lives for days, weeks and, at times, months in an atmosphere which contains from two to three times the amount of oxygen contained in the ordinary air.

MANY new models of oxygen tents have been manufactured, but in the best of them provision is made not only for the maintenance of a suitably increased oxygen concentration but also for air movement and hygienic conditions of temperature and humidity. The oxygen concentration inside is tested three times a day in order to make certain that leaks are not destroying the effectiveness of the treatment.

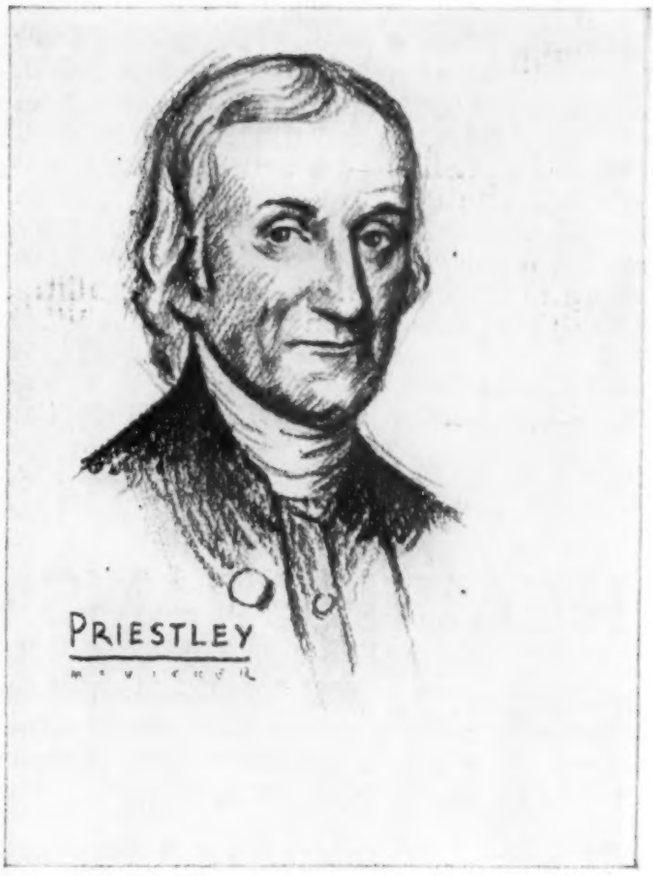
In the absence of these tests of the oxygen concentration in the tent, we go back to the days of Thomas Beddoes, one of whose difficulties was that he didn't know how much oxygen the patient required and how much he was giving him. One of the most important conceptions in the modern development of oxygen therapy, which has been largely the result of American investigation, has been the conception of oxygen dosage.

The ordinary air contains 21 per cent oxygen. In order to give oxygen effectively the concentration must be raised to within a range of from 35 to 60 per cent, depending on the type and severity of illness which the patient has. An old and generally worthless method was the provision of oxygen by holding in front of the patient's face a funnel into which oxygen was admitted from a tank and connecting tube. In addition to oxygen chambers and tents there has been developed a simpler but still a moderately effective method of giving oxygen by passing a small rubber tube into the nose as far as the back of the throat. This is called the nasal catheter method and is capable of widespread usefulness. The oxygen is admitted from a calibrated gage on a tank of high pressure oxygen; it is passed through water in order to humidify it and thence through a connecting tube to the throat of the patient. From four to six quarts of oxygen are thus admitted every minute to the air inhaled by the patient; in this simple method, from 35 to 40 per cent oxygen and under certain circumstances even higher concentrations may be provided. In all these methods, so-called commercial oxygen is employed because it is vastly cheaper and essentially no different from what was formerly called medicinal oxygen. Commercial oxygen is over 99.5 per cent pure, which is as high a concentration as so-called medical oxygen in low pressure tanks.

BECAUSE of the necessity of speed in the provision of oxygen and apparatus, commercial companies have been formed in the United States to supply suitable equipment on emergency demand. Some of the methods still seem to be expensive; but as time goes on, more allowance is made for the person of moderate means to secure treatment, whereas the poor patient may receive it at many hospitals. In London, where oxygen tent and nasal catheter treatment have recently been adopted, an attempt is being made to form a giant National Oxygen Service whereby both the rich and the poor may be supplied with suitable oxygen therapy on emergency demand. On the continent of Europe there are in general few provisions for effective oxygen therapy such as compare with the developments in the United

States, where oxygen rooms, oxygen tents and measured nasal catheter treatment are generally available. Oxygen chambers are installed in a number of hospitals such as the Mayo Clinic, Rochester, the Michael Reese and the Passavant hospitals, Chicago, the University of Maryland Hospital, Baltimore, and the Harlem Hospital, New York. These chambers are all leak-tight rooms, ventilated by a motor blower which passes the air in and out of the chamber to be cooled and dried. Oxygen rooms at New York Presbyterian Hospital are conditioned without motor blower circulation but by the use of convection currents of air which are set into motion by exposure alternately to hot and cold pipes.

THE value of oxygen therapy in clinical illness can be summarized by the statement that wherever there is an abrupt decrease in the supply of oxygen to the tissues of the body, oxygen treatment is helpful. Thus, in widespread disease of the lungs, oxygen in ordinary air, that is, in a concentration of 21 per cent, may be unable to pass through the swollen tiny air cells. The blood then receives less than its normal amount as it leaves the lungs and cannot deliver to the various organs of the body a normal pressure of oxygen. As Priestley showed, a mouse may live twice as long in a leak-tight box if he is breathing oxygen instead of air. Thus, in pneumonia, in which the body's supply of oxygen may be curtailed, inhalation of higher concentrations of oxygen tends to counteract this deficiency and to change the patient's blue color to pink and to relieve his shortness of breath by providing him with two or three or four times as much oxygen in each breath he takes. In heart failure the blood circulates so slowly that the tissues may not get as much as they normally would unless an increased amount is supplied per unit of circulating blood. Oxygen therapy in suitable cases relieves difficult breathing, restores strength and helps to reduce the swelling in the patient's legs and back. Henderson and Haggard at Yale University have given 7 per cent carbon dioxide with pure oxygen to stimulate breathing and more quickly restore oxygen in the dangerous carbon monoxide poisoning. Emergency squads connected with the police department are on hand to give this type of oxygen-carbon dioxide treatment in gas poisoning, electric shock, drowning and other cases of sudden oxygen want in which it appears that the breathing effort is about to stop. There are many other indications for oxygen treatment, such as in the new-born when the lungs do not fully expand, collapse of the lungs which occurs occasionally after operations, and the preparation of patients for operation. It is scarcely possible to mention the names of the many pioneer workers in oxygen therapy. Stadie, Barach, Boothby, Binger did early work in oxygen therapy in this country, Meakins in Canada and Campbell and Poulton in England.



Forty years ago, on January 31, two English scientists, Lord Rayleigh and Lord Ramsay, announced to an incredulous world that they had discovered a new gas in the atmosphere amounting to almost 1 per cent of the air. Previous to this time the air was thought to be composed of approximately 21 per cent oxygen and 79 per cent nitrogen with the merest trace of carbon dioxide and water vapor. The discovery came about through pondering over a simple fact which Rayleigh had found out previously; namely, that nitrogen when prepared from air was distinctly heavier than a similar volume of the gas made from ammonia or any other chemical. Through physical methods such as diffusion the investigators were able to prove that the nitrogen of the air appeared to be heavier than chemically prepared nitrogen because it was mixed with another gas which was heavier than either nitrogen or oxygen. They called the new gas argon, meaning idle, because it would not go into chemical union with other elements.

ON MARCH 24 of the same year, Ramsay wrote to his wife that he had isolated from the mineral cleavite another new gas which was exceptionally light, to which he gave the name helium: "Let's take the biggest piece of news first. I bottled the new gas in a vacuum tube and arranged so I could see its spectrum and

that of argon in the same spectroscope at the same time. There is argon in the gas; but there was a magnificent yellow line, brilliantly bright, not coincident with but very close to the sodium yellow line. I was puzzled but began to smell a rat. I told Crookes; . . . on Saturday morning a telegram came from Crookes. . . . You may wonder what it means. Helium is the name given to a line in the solar spectrum, known to belong to an element, but that element has hitherto been unknown on the earth . . . 587.49 is the wave length of the brilliant line. It is quite overwhelming and beats argon. I telegraphed Barthelot at once yesterday—'Gas obtenue par moi clevite melange argon helium! Crookes identifie spectre. Faites communication Academie lundi.—Ramsay.' I have written Lord Rayleigh and I'll send a note to the R. S. tomorrow, but it will be merely a claim for priority, for there will be no meeting for a month."

Three years later, Ramsay and Travers discovered three other inert rare gases in the atmosphere: krypton, neon and xenon. The five rare gases discovered within a period of four years are a monument to the genius of Ramsay, whose imaginative mind was able to grasp, from relatively simple facts, *(Continued on page 665)*

HEALTHGRAMS ✣ from Articles in This Issue

Striking or frightening children into good behavior is another policy pursued by some parents. Such methods are indications of their inability to raise children properly. *See page 613*

Observations and careful, scientific study have disclosed that at the outset cancer is a local disease, confining itself for a long time to the vicinity first attacked, and that a cure depends on the stage at which the malady is noted and on early and proper treatment. *See page 600*

Time alone will reveal whether all our preventive medicine will be for the good of the race in those long periods which are dealt with by history and evolution. *See page 636*

The student of driving technic learns it is better in the long run to be applauded for his skill in all phases of motoring than for his daring in sliding past a truck on a "blind" curve. *See page 594*

Never force medicine on a child, if medicine must be taken. It is best to treat him as an adult, allowing an introductory sniff or taste; then he will usually clean up the noxious mess like a soldier. *See page 605*

The price we are paying now by living with dogs in thickly populated urban areas, particularly in city apartments, is far too great as compared with the advantages that accrue from such association. *See page 632*

The secretion of the thyroid gland, then, is essential to growth and normal physical and mental activity; it stimulates the cells of the body to carry on their work. *See page 638*

Quackery in the field of health is the greatest of all the menaces. Money, once lost, may sometimes be regained, but health, once lost, is regained only with the greatest of difficulty. Life, once lost, is never regained! *See page 584*

Various things affect walking: the type of shoes worn, the type of muscular coordination, the kind of clothing, the health of the body and the mental attitude. *See page 625*

Accuracy in diagnosing heart ailments is greatly increased after tracing a picture of the heart beats by means of a string galvanometer. *See page 616*

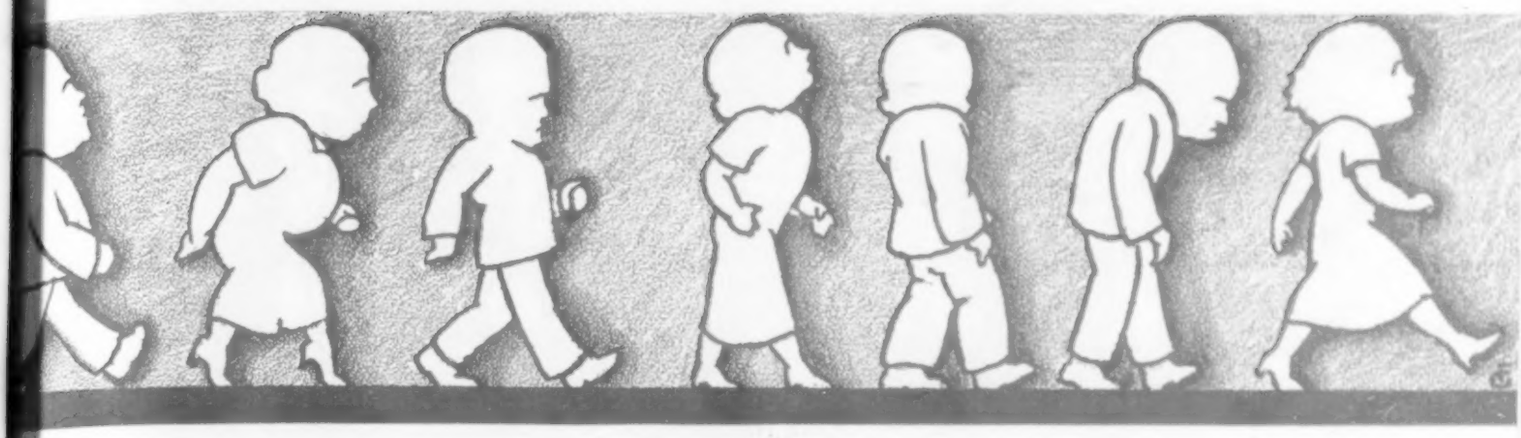
It is a peculiar fact that if there are no other types of germs in the wound, tetanus bacillus, the lockjaw germ, is not likely to develop, whereas if there are, the tetanus will certainly work havoc. *See page 589*

When the general health is properly maintained the next most important factor in preserving a good complexion is cleanliness. *See page 602*

Oxygen treatment in suitable cases relieves difficult breathing, restores strength and helps to reduce the swelling in the patient's legs and back. *See page 620*

Thanks to Pavlov and his dogs, many phenomena of mental instability can now be accurately interpreted, reconditioned and often cured. *See page 642*

The only effective treatment of cataract is by surgical removal. *See page 592*



WALKING REVELATIONS

By MAE KELLY

STANDING posture will show how much the novice has learned about posture principles, but the walking posture will disclose how many of these principles are put into actual practice.

Huxley, the philosopher, was certainly right when he wrote that the great end of life is not knowledge but action. It does not matter how excellent the standing posture is; it is merely a pose if it does not carry over into the moving or walking posture. Good posture must become such a soundly fixed habit that the old familiar bumps, jerks and wiggles are entirely discarded.

Only by the walk does the individual reveal his practical adaptation of posture precepts. Even in the days of Dickens the healthful values of the walk were appreciated, for his advice was that we should walk to be happy and walk to be healthy and, may it be most earnestly added, walk to be known! Nothing can so quickly and completely reveal the presence or absence of correct muscle balance in the working muscles of the body as the walk. The ability to analyze a walk depends on the knowledge of muscles and the power to tell when they are too relaxed and when they are too tense.

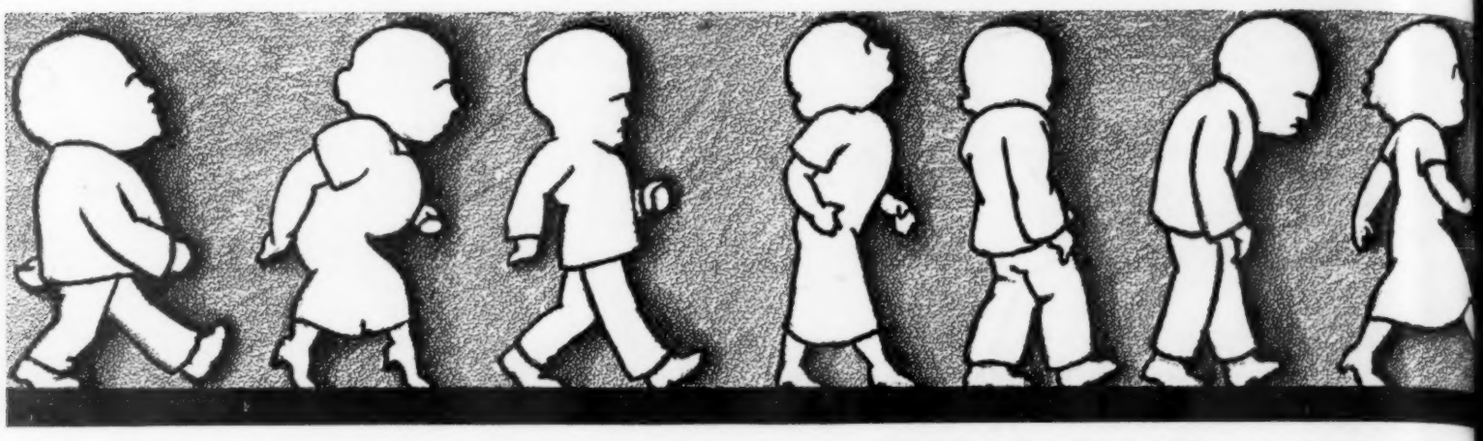
There are many gaits that the unfortunate victim cannot help because certain muscles or brain cells are destroyed through illness or injury, requiring operations, braces and exercises to overcome or more often merely to improve the body mechanics.

The gait characteristics to be discussed in this article are well within the individual's power to abolish, providing just a little time and thought are daily put on the minor mechanical imperfections that need to be altered. A mirror can be one of the greatest walk adjustors possible, provided one looks into it searchingly, fully convinced that by one's walk is one known!

Novelists have long recognized the physical and psychologic powers of the walk. Such excerpts as these are typical: "Or was it the wonder of her walk, which made all other women he had ever known appear to mince and hobble, like rusty toys?" "She entered a room so gracefully she made every one else seem to gallop in on horseback." Jay William Hudson in his novel "Abbe Pierre" has Monsieur Ware, an American visiting in a Gascon village, observe: "I think these wooden shoes are what keep your peasants from rising to the higher class. They literally weigh them down so they cannot get above being peasants at all. . . . I have watched your people wearing them. They have a decided effect upon one's walk and carriage. They are so big that one gets to walk with legs spread a little apart; being heavy and loose, too, you cannot raise your feet much from the ground, and you cannot bend them, so that you acquire a shambling, shuffling walk that dooms a man to remain a peasant for life."

Various things affect walking: the type of shoes worn, the type of muscular coordination, the kind of clothing, the health of the body and the mental attitude. Low-heeled shoes with the proper toe room and inner line develop a longer, more secure stride. The base of support for the heel is wide and substantial while in high-heeled shoes the wearer is trying to balance on a small peg. A shorter, jerkier stride results from this. Because of the insecurity of the support the steps follow more rapidly. A healthy individual will express that healthy condition in his walk, which gives the impression of a reserve supply of energy stored in the body. One's mental condition affects the walk. The individual who feels that he is a trifle better than his neighbor, or who knows more than some one else or who has an optimistic outlook on life will express that in his walk. The one who feels that he is in the way of every one will walk as if he were trying to remain out of the way.

Walking becomes a habit, so much so that one can easily acquire a bad habit of walking without realizing it. When this happens, it is time to check up. Have you ever said to yourself on seeing a person walk along the street, head up, arms swinging and a spring in his step: "I wish I could enjoy walking as much as that person



seems to?" You can! There is no secret connected with walking in such a manner. It is a matter of mechanics combined with an inner expression of health. Walking, or the momentary losing of balance and regaining it, is a universal accomplishment. Every individual walks, gracefully or awkwardly, correctly or incorrectly, putting into his walk an expression of himself. The rhythm of an individual's walk is the rhythm of himself.

To walk correctly is not merely a matter of putting first one foot forward and then the other. The entire body bears a relation to the walk. A well poised body is one in which the shoulders are directly above and in a line with the pelvic girdle; the head is back with a short back neck line; the arms hang naturally at the sides, and the upper portion of the chest is still. These conditions will insure a walk smoother than usual. The hip joint is a vital spot in correct walking. The muscles around it are arranged to give the smoothest locomotion that a joint can give. To secure the correct action here, the toes should be pointed straight forward when a step is taken. The leg should not rotate outward but should swing forward and backward from the hip joint. As the foot is placed forward the weight of the body is successively put on the heel, the outside of the foot and the outer side of the transverse arch, and the toes are pulled back toward the heel as they would be if walking on an icy pavement. At the point of lifting the foot forward there is a slight push with the toes which gives a springy sensation. Unless the toes are straight ahead and slightly flexed they are not in a proper position to push.

When the head, shoulder and pelvic girdles are not in line as described, or the feet do not travel in the manner designated or the weight is not properly localized, various bad habits result. The following are some peculiarities to which the walk is heir:

THE WADDLER

A silly but true rhyme runs this way:

A frog's a frog,
And a duck's a duck,
But if you don't toe straight ahead
You will be out of luck.

The waddle brings a duck to mind, due to the turned-out toes.

The majority of people with this difficulty permit most of the leg muscles to be indolent while the trunk, shoulders, arms and even the head muscles pull the legs forward. The whole body is in a state of perpetual commotion when walking is necessary. A vicious cycle is encountered in the waddler. You will say he waddles because he is fat, but if you were strictly accurate you would say he is fat because he waddles. When the leg muscles are not made to carry the weight and when the feet are not pointing forward the leg muscles become lazy, allowing fat to accumulate until the piled-up fat really does become so plentiful that waddling is about all that is left to do. This is a case of walking on the feet but not with the feet.

THE JUMPING-JACK WALK

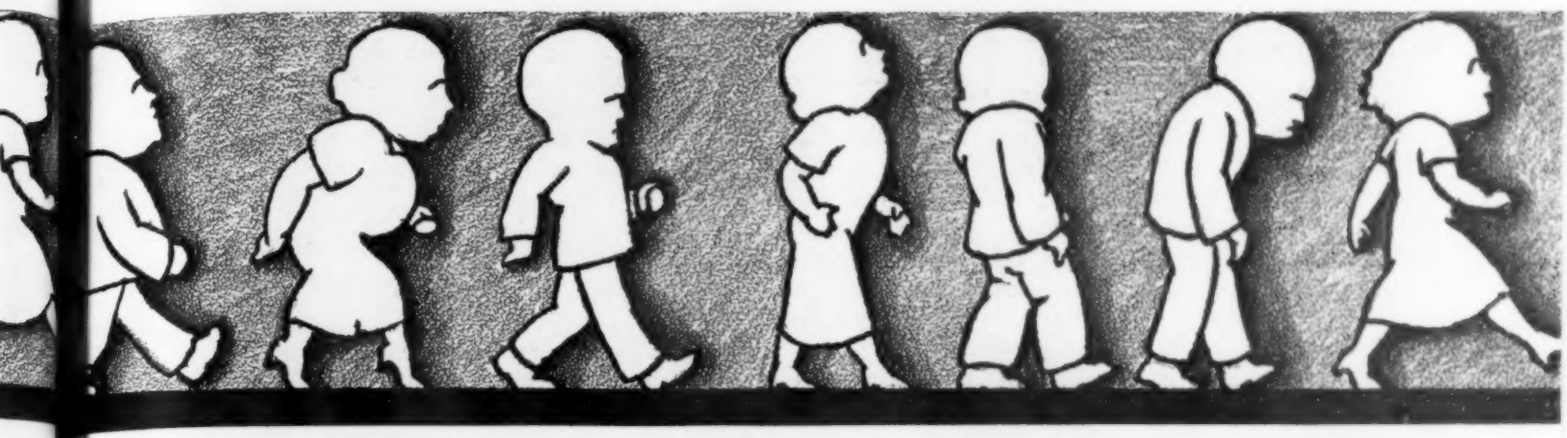
Still another peculiar walk will sometimes develop because of turned-out toes. This is much more rare than the former type and is more often seen in the case of an active man. Instead of making the muscles of the upper part of the torso work, the subject bends the knee of the foot going forward and so brings the leg muscles into play in a most unusual fashion. When attempting to walk rapidly the subject is a perfect representation of a living jumping-jack.

THE SHOULDER SLINGER

If only one foot turns out the most outstanding peculiarity is the exaggerated swinging of one shoulder, the one on the side of the turned-out foot. When both feet are pointed outward the motion is greater and more noticeable in the pelvic region.

THE HIP SWITCHER

This gait is found in individuals who have corrected the everted position of the feet but who have not corrected the hip motion which invariably accompanies the former incorrect use of the feet. It gives the person a self sufficient air, unusually so when viewed from the rear.



THE CARESSING WALK

The one who hesitates (heel-ball, heel-ball) has an equally important and cocky air. The weight should, of course, be transferred so quickly from heel to ball that the whole seems like one motion and the individual gives the impression of alertness and ability to perform a movement in any direction instead of caressing the floor at every step. Only the wearers of flat heels can develop this idiosyncrasy; hence men are more prone to it than women. If body movement is added the walk is somewhat akin to the rolling gait of the sailor.

THE MINCER

The mincer is generally a woman; she brings the toes instead of the heel down first, giving an impression of affectation.

THE BOUNCER

The possessor of this walk will no doubt have excellent longitudinal arches. The transverse arches may not be so perfect. For springiness of walk, this one is difficult to beat. The feet are perfectly placed; the subject comes way up on his toes at each step. To walk with a glass of water on the head would mean a deluge. Even a good thing can be grossly exaggerated!

THE POUNDER

Thud, thud, thud, here comes the pounder! The feet are whacked into the floor as if they were sledge hammers. For an overhead apartment neighbor this one is the world's worst. When the body weight instead of being slightly forward is back on the heels the pounder results. This posture may be due to poor training, such as encouraging the shoulders to be thrown back or the chest held high; to poor use of feet; to pregnancy, or to an extremely short gastrocnemius muscle. Too high a weight center and insufficient control of leg muscles are responsible.

THE HEEL WALK

As in the gait of the pounder the weight is on the heels; but instead of pounding, since the feet are too tender for that, the subject hitches along. The transverse or metatarsal arches in the front of the feet have become so distorted and painful that they are incapable of bearing the owner's weight, so that the only possible mode of walking is to place all the weight on the heels, thus protecting the front of the feet. This, of course, permits only a stilted, slow and cumbersome method of locomotion.

THE ROCKING CHAIR WALK

At every step the trunk rocks forward and back. The rocking chair movement of the trunk is furnishing the power to propel the body forward, depriving the arches of their opportunity to function. The arches may be perfect, but they cannot work because the body weight is back too far to afford the toes and arches a "push-off"; consequently instead of coming down to break the forward fall of the body the foot has to reach out and then step. Much time is lost. The false joint allowing this unnecessary swaying is possible because the back's weakest spot is flexible enough to permit it. This spot is in the lower part of the back, midway between the point at which the ribs cease on the spinal column and the top of the pelvis begins. This is the only part of the torso below the neck that is not encircled in a bony cage; and since the slender spinal column is the sole bony support, naturally the greatest flexibility can be obtained at this point. Two, three or four black spots may become visible in this region. It is evident that it takes no time at all for this tender location to become sorely overworked and fatigued. And then the owners wonder why there is always an ache or a pain in the lower portion of the back. Those who do not put all the jar on the back, as do the Rockers, develop a Bay Window Walk, a stiff-legged gait, with the heels pounding into the floor.

Practically all who have swayback or lordosis have one or the other of the foregoing walks.

THE PEERER

This is the offender who might seem to merit the too well known command "Throw your shoulders back!" The head precedes the body, in a seeming endeavor to fortell what the rest of it is going to have to encounter. The chest

is sunken. The shortsighted mortal is, more often than not, the peerer.

THE ELEVATED SHOULDER WALK

In this the head shrinks into insignificance and looks like a poor little jailbird vainly endeavoring to escape from two burly officers of the law, the shoulder girdles. If the mental attitude is in any way that of the shrinking violet type, the chin is down and the eyes make furtive glances upward whenever there is dire need to look the world in the eye.

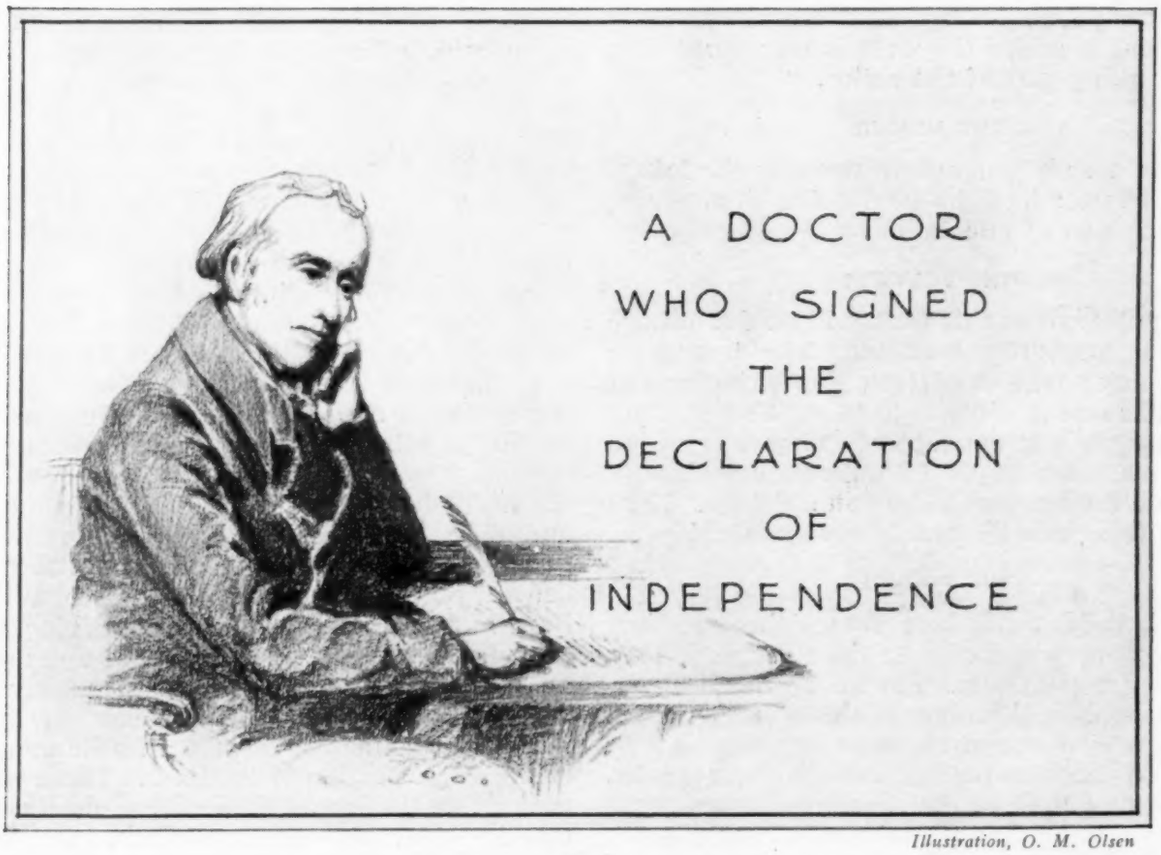
If the head is tilted back with the chin held up, then indeed the person looks like a go-getter. Let any one get in the way, if he dare! The nervous, tense, highly strung person is sometimes subject to this posture because of his tense mind. Teaching the shoulders to "let go" and the weight to be centered low down in the pelvic region must be constantly hammered into the brain of the off-centered subject. To correct this takes much time and patience, but the reward is worth while.

THE KANGAROO WALK

In keeping his balance on his haunches the kangaroo inclines the upper part of his body far forward. So do some persons in walking. The head and trunk are so far in advance of the hips that the person resembles a carpenter's measuring rule or a culprit ready for a continual spanking. Instead of *(Continued on page 643)*

Curious Stories About Health

The Eleventh of a Series by MELVIN PRICE ISAMINGER



Illustration, O. M. Olsen

BENJAMIN RUSH (1747-1813), a vigorous and versatile personality connected with the Revolutionary War period, has the distinction of being the only physician to sign that great document, the Declaration of Independence.

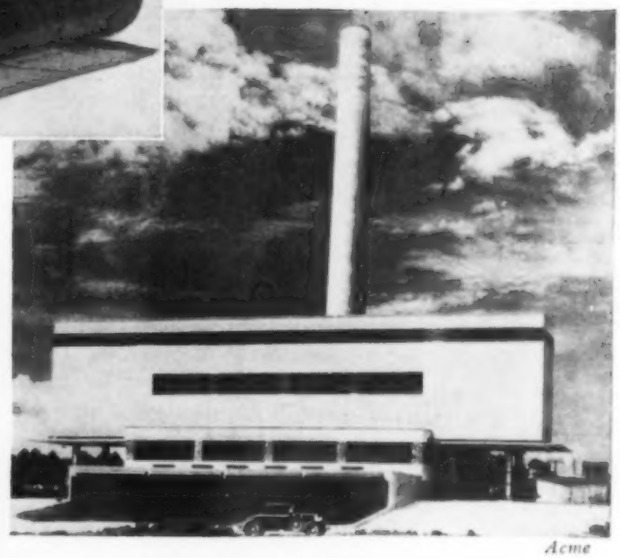
He was linked with most of the important scientific, social and political movements of the day. Though a successful and busy practitioner of medicine, and the first psychiatrist in the United States, he emerged as a figure of vast influence in patriotic and philanthropic circles. Incidentally, he was one of the first presidents of the Society for the Abolition of Slavery in America.

The memory of Benjamin Rush is perpetuated by one of the country's ranking medical schools, Rush Medical College of Chicago.

Here and There

Acme

THIS CALIFORNIA INVENTION IS A MOTORED BEACH COMBER. IT PICKS UP FOREIGN PARTICLES FROM A 4 INCH DEPTH.



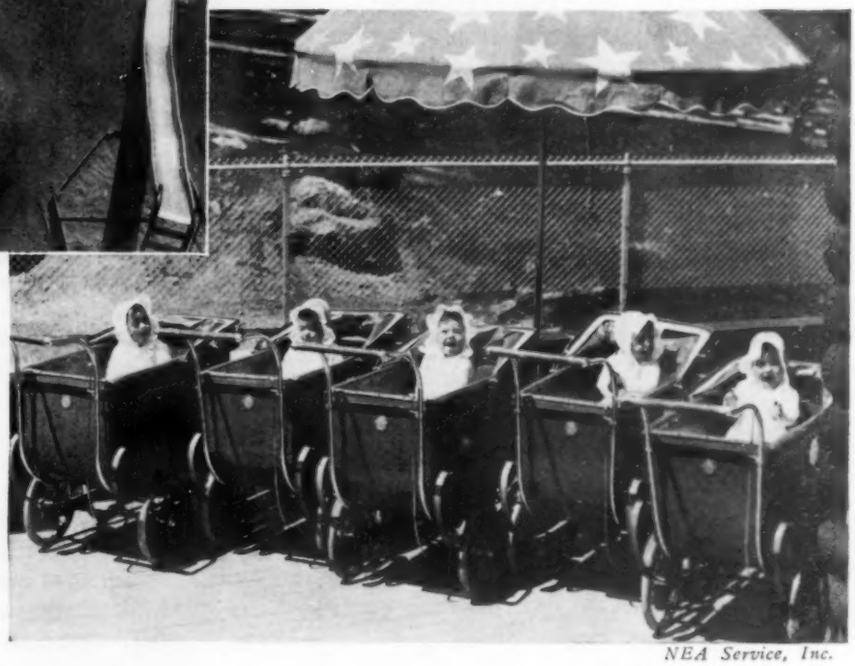
Acme

ABOVE IS A MODERNISTIC GARBAGE DISPOSAL PLANT, LOCATED IN SHREVEPORT, LA. IT WAS RECENTLY FINISHED WITH PWA FUNDS.

Galloway

PICTURED HERE IS A MODEL NEW YORK PLAYGROUND, CONSTRUCTED RECENTLY IN THE CENTER OF THE TENEMENT DISTRICT.

THE FIVE LITTLE QUINTS ARE SEEN BASKING IN THE SUNLIGHT AND KEEN CANADIAN AIR ON THE PORCH OF DR. DAFOE'S HOSPITAL.



NEA Service, Inc.

A Visit to Jenner's Home

SOME time ago Mrs. Pusey and I were motoring in southwestern England. As we were nearing Gloucester, suddenly she said, "Isn't Gloucester where Jenner lived?" I said it was not. He lived in Berkeley. She asked where Berkeley was, and I told her that it was sixteen miles from Gloucester. She might have guessed I didn't really want to go to Berkeley. But she said: "We'll have a bite of lunch at Gloucester, go over to Berkeley, and if we do not get to Shrewsbury until late it will make no difference." So we went to Berkeley.

Before leaving Gloucester I tried to get the location of Jenner's home and grave in Berkeley by inquiring of several persons. Their replies indicated a good deal of ignorance of medical matters in general and total ignorance of Jenner. I finally went, on my wife's suggestion, to a druggist in the hope that he would be familiar with such things. He was as ignorant as the rest. By a curious quirk of history, Gloucester has been a hotbed of antivaccinationists. In the cathedral there is a statue of Jenner erected by the medical profession and by the inhabitants of Gloucester soon enough after his introduction of vaccination for them to realize the greatness of his work. Jenner's birth and residence in Gloucestershire is the greatest distinction in the 2,000 years of its existence. In spite of all these facts, Gloucesterites apparently have not thought much of him. In retribution they had a bad outbreak of smallpox not many years ago.

THE druggist told me I could probably get information at Berkeley. That seemed to me a reasonable idea, and I left Gloucester without any addition to my knowledge of Jenner. It is a beautiful drive to Berkeley over the rolling country, through the vales of Gloucester and Berkeley. It is a country of luxurious meadows and fine cattle. As we approached Berkeley, we went across a little valley with a herd of fine dairy cattle resting by a creek. It occurred to me that here the time, the place and the man had been happily combined for the discovery of immunization by cowpox.

The people are not so familiar with Jenner, even in Berkeley, which would indicate that there are not many visitors to this shrine. It was only after several inquiries that we found in a linen shop an intelligent young woman who knew all about Jenner and gave us proper directions. From her we learned that Jenner's house is now the rectory and, following her suggestions, we called on Mr. Armour, the rector, who volunteered in a courteous English way to conduct us over the place. He made our visit as pleasant as possible.

Jenner was born in Berkeley and lived out his life there except when he was preparing in medicine at Edinburgh and London. Even when his discovery of vaccination had made him one of the world's most famous men, and he was assured of a great position in London and urged to come there, he refused to desert his country home and his country practice. He enjoyed the rural scenes, the private and professional life and the opportunities which it gave him for his study of natural history, particularly of birds, for before his discovery of vaccination he had become well known in English scientific circles because of his study of birds.

WHAT we know of Jenner's life in Berkeley suggests a particularly pleasing picture. He combined his scientific interests with his public interests. He was one of the most respected citizens throughout his life there, holding the most important positions in local public life. His association with John Hunter in the study of birds and all sorts of animals which he had the opportunity of observing in Gloucester and his correspondence with Hunter on the subject form one of the interesting scientific and per-

By WILLIAM ALLEN PUSEY

A VACCINATION SCENE DURING THE TIME OF THE GREAT JENNER (FROM ENGRAVING BY BOILY).

Thompson Photo

sonal friendships in history. He had been Hunter's favorite pupil and had lived in his house for two years. The best side of the irascible Hunter is shown in his relations with Jenner, and Jenner himself is shown as one of the most lovable and one of the ablest of men.

It was fortunate that Jenner was so situated materially that he could lead the life that he did. He came of a prosperous, able family on both his father's and his mother's side. His father had been the vicar of Berkeley, and Jenner was born in the vicarage. His brothers and many of the family had enjoyed a university education and had later gone into medicine or the Church, becoming men of position and substance. Jenner was able to contribute liberally to public philanthropies and to scientific enterprises. Among his assets he had a farm, which was evidently a source of revenue. In one of his letters he says that his private income is adequate for his wants. His wife, who was a never ending source of comfort and happiness to him, brought property to the union. John Hunter writes to him, "I was glad when I heard you was married to a woman of fortune; [the sentence is worth completing, because it was so characteristic of Hunter] but let her go, never mind her. I shall employ you with hedgehogs."

Berkeley today is a typical English town of six or seven thousand inhabitants. It is the seat of the earls of Berkeley, whose castle, standing on a fine eminence overlooking the valley of the Severn, is one of the historic castles in England. Next to the castle in a beautiful grove stands a handsome old Gothic church. The home of Jenner is nearby. Jenner once described his home as "a small house, Chantry Cottage, near the church." But the house is no cottage in the ordinary sense of the term. It is a comfortable two story house of ten or twelve rooms, now the rectory of the parish. Those who have lived there since Jenner's day have had the intelligence to realize its traditions and preserve it as Jenner left it. In a wing overlooking the garden and the church is Jenner's study, the scene of his intensive work on the difficult problems involved in establishing vaccination, where he probably wrote his famous report, "An Inquiry into the Cause and Effect of Variolae Vaccinae, A Disease Discovered in the Western Counties of England." The grounds are about two or three acres in extent, with a handsome lawn, shrubbery and fine old trees.

Under one of the big old trees across the lawn from the house and within 50 or 60 yards of the church stands the most interesting relic of Jenner, the hut in which he performed the first vaccination. He had built the hut himself, as a diversion. It is made of heavy boards, and it stands under a great tree. Here on May 14, 1796, one of the important dates in the history of human welfare, Jenner performed the first vaccination on a healthy boy, James Phipps.

We went from the hut to the church, where Jenner is buried. This fine old English Gothic structure, built in the thirteenth and fourteenth centuries by the lords of Berkeley, is the parish church of a prosperous parish and is excellently cared for. Near the chancel, in the most distinguished spot in the church, Jenner's bones lie beside his wife under a flat stone, where his name and the dates of his birth and death are inscribed. The whole place gave us both a rare emotional reaction.

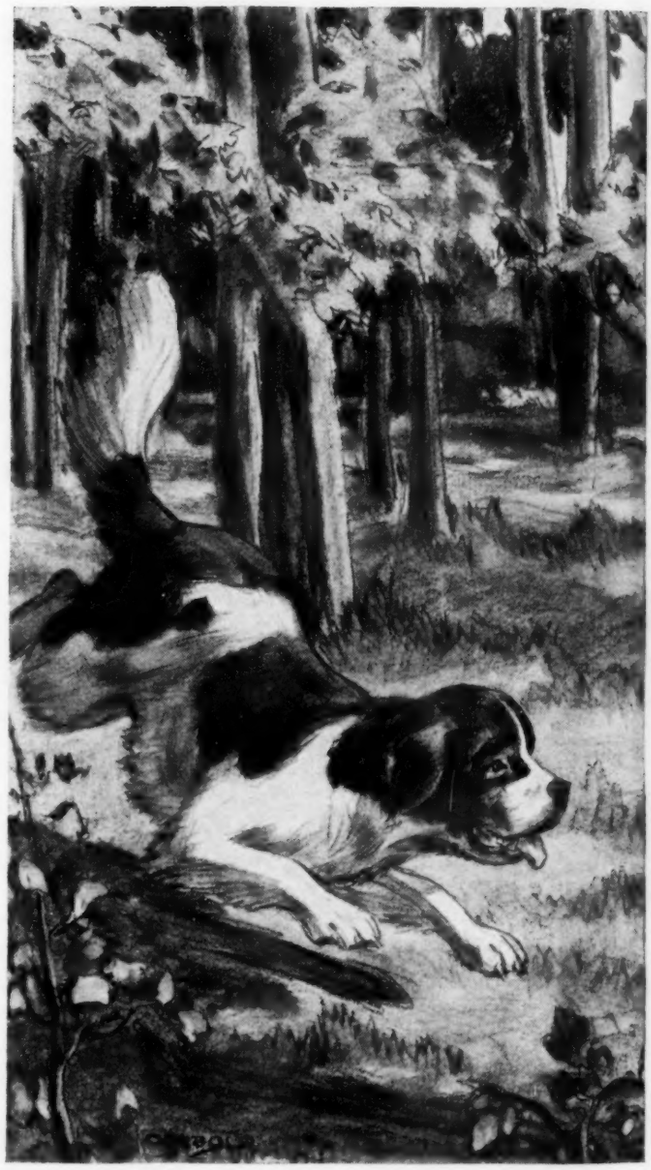
Mr. Armour told us that one day he had seen an odd looking little man wandering over the grounds apparently confused and carrying a large parcel. He went out to see what the man wanted. The stranger was a young Japanese physician who said that he was looking for Jenner's grave. As a tribute of honor to Jenner, he had made his pilgrimage on foot. He had walked the 120 miles from London, carrying in the parcel a wreath to put on Jenner's grave. It seemed not an extravagant tribute to the man and the place.

Everything in Its Proper

In life the firmest friend,
The first to welcome, foremost to defend,
Whose honest heart is still his master's own,
Who labours, fights, lives, breathes for him alone.
—Lord Byron.

JUST WHAT place dogs should take in their relation to human beings is a problem toward which there has been, is and probably always will be much difference of opinion. For centuries the dog, next to the horse, has probably been looked on as the most constant and dependable companion and friend of man. In semicivilized society this evaluation was probably correct. Not only was the dog almost indispensable in the chase, but because of his acute hearing and even more acute sense of smell, he was the ever alert sentry who constantly guarded his master against attack by human and animal enemies. As civilization has progressed and urbanization has to a large measure supplanted rural life, the picture has gradually changed. Dogs are no longer indispensable to man; in fact, under certain conditions they become nuisances and often even a direct menace to his health and well being.

Few sights are more beautiful than the vision of a charming damsel in light, fluffy, summer raiment with a beautiful collie at her side; or the damsel chasing butterflies or picking flowers in an open clearing, with the dog romping along, just glad to be alive. Few things are more disgusting than a sour looking, middle-aged, childless married woman with vividly painted lips and finger nails, being led around by her inbred, brainless "pooch" out on his morning or evening errand of defiling the sidewalks and the beautiful white snow in the winter, and befouling the green grass and destroying the parks, parkways and lawns in the spring, summer and autumn. This process of destruction has developed into such a nuisance that it has become practically impossible to maintain parkways and lawns in certain residential sections of our large cities.



AN INSPIRING SIGHT—A NEWFOUNDLAND DOG AND

ON THE other hand, few sights are more inspiring than a carefree lad, enthusiastic with youth and rosy with health, roaming through the forest with an alert, vigorous Newfoundland dog as a companion, the boy absorbing the beauties of nature which later will make it easier for him to meet the vicissitudes of an arduous business or professional career and laying up treasures which he may call up as beautiful memories toward the evening of life; the dog chasing squirrels, chipmunks and whatever comes across his path. Few things are more pitiful than to see a poor, love-hungry city girl of say 6 or 8, whose mother is too busy with society and charity organizations to give her the attention and affection she craves and needs, coddling, hugging and even kissing a lap dog. Disgusting, particularly when one realizes just where that same dog's snout has been and what that same tongue has licked only a few minutes before it is now licking that little child's face.

There are several important health problems involved in this connection. What good is there

Place—Even Dogs

A HEALTHY BOY ON A JAUNT THROUGH THE WOODS.

in physicians' constant cautioning of their private patients and the public in general against such intimate contact with dogs? What good is there in the formulation and enforcement of rigid quarantine regulations which are intended to prevent human carriers from disseminating infectious diseases, when dogs and cats are permitted to go about uncurbed and carry these diseases from house to house and from child to child?

I, too, love dogs, but I want them in their proper place, and I love them too much to want to condemn any dog to the unnatural life he has

By One Who Loves Children as Well as Dogs

to lead in any modern apartment in a large city. This is a problem which might well be given serious consideration and study by some of our humane societies.

As I look back on my boyhood days, now left behind for well over half a century, I remember that some of my best friends were dogs and horses; friends with whom I spent many delightful hours and from whom I learned many lessons that have been of value to me in my varied and active life. My experience with two Newfoundland dogs even now stands out as particularly interesting and instructive.

One rather dark, moonless evening in early summer, when I was about 7 years old, we children were up later than usual because we were waiting for Father to return from having taken a load of grain to the nearest railway station, fifteen miles distant. When he drove into the farmyard, my elder sister and I rushed out to greet him; and there, to our surprise, was a beautiful, friendly Newfoundland dog. He acted as though we were long lost friends, though he had, of course, never seen us before. He was probably anticipating a good dog supper, which was soon forthcoming. As I look back now, I can still clearly visualize that animal; he was the most beautiful specimen of his breed I have ever seen. Our father told us that he did not know how or where or when the dog had joined him, but that he had first noticed him following the wagon when about eight miles from home, just as it was growing dusk.

At the time of this occurrence we lived on a large grain farm, which was then being transformed to permit the raising of live stock also. My father had a large pasture, most of it still in the semiwild state, in which he grazed some thirty-five or forty head of cattle of all ages, among them six or seven milch cows. Mornings my sister and I were permitted to sleep late, and one of the hired men took the cows to pasture; but in the evening, particularly when the men were late at work in the hay or harvest fields, it became our chore to get the cows home for milking time. We would drive all the cattle up to the gate, and while one of us acted as gatekeeper in order to prevent the young cattle from

getting out, the other would chase out one cow after the other. The first evening, and every evening thereafter, the new dog went with us. To our great surprise, in less than a week's time the minute we got to the pasture he would run in, round up all the cattle, pick out one cow after the other and bring her to the gate, never once making an error in his selection. As getting the cows out of the pasture had always been quite a strenuous job, and because the dog was a most lovable creature, we were naturally much pleased and soon became very fond of him. After about eight weeks the dog vanished as suddenly and mysteriously as he had come. We children looked for him everywhere and inquired about him among our neighbors, but never again did we see "hide nor hair" of him. We mourned his loss for some time but eventually concluded that he must have been one of those dog travelers of which we had heard.

When I was a country school teacher I had another interesting experience, again with a Newfoundland dog. The district schoolhouse was located about three-eighths mile, the distance of three city blocks, from the farmhouse where I had my board and lodging. The road by which I went to school was lined on either side with trees and old-fashioned rail fences. Morning and noon, five days a week, I went regularly to school, and never once did the dog attempt to follow me; but on about the third Saturday afternoon after I came there, when I started out to walk to the nearby village the dog appeared at my side, eager to go with me, frisking and gamboling about, saying in dog language, "Please, won't you take me along?" I did not wish him to accompany me, so when he insisted on going along I had to lock him up in a shed. The following Saturday when I started out again the dog made no noticeable move to go with me, but when I had gone about half a mile he suddenly appeared on the scene as from nowhere, wagging his tail and overjoyed at having, apparently accidentally, come across me.

Invariably the same thing happened again and again on Saturdays and Sundays. Because I had locked him up the one time he subsequently made no move to follow me when I started out, but after I was outside the gate he would slink along on the other side of one of the rail fences until we were about half a mile away from the house, too far for me to take him home. His delight in each of these supposedly accidental meetings was a joy to behold. After this had happened several times, I would look back occasionally to see whether or not the dog was following me. The minute I did so he would crouch down flat, his head down, watching me carefully until I resumed my walk; then he would follow me stealthily as before.

I have wondered many a time, and am still wondering, just how the dog could so unerringly differentiate between the five school days and Saturdays and Sundays, for I never carried a dinner pail and rarely books; and yet not once did I observe him following me on school days, nor once did he come with me to school. On several occasions, in order to test him, I started out on a Saturday or Sunday morning at the regular time and as if I were going to school, but never did he fail to show up at about his accustomed place, always with the same antics. On Saturdays I always wore my school clothes, so it could hardly have been the change in dress; however, there must have been something different that the dog was able to sense. Whatever it was, I could not at that time, nor since, figure it out, although I have tried repeatedly to solve the mystery.

In contrast to the many good and interesting things that can be said about dogs, there are many serious objections to dogs living with human beings in crowded apartments or in densely populated areas. Severe cases of asthma may often be traced to pets living in the same apartment with human beings. There are still annually a great many occasions when persons must be given antirabies serum for dog bites. This is not only an expensive but a disagreeable procedure. Even so, every year there still are a number of deaths in this country from rabies. I have witnessed one such death in a 10 year old girl, and of all the deaths I have seen, this was the most terrible and tragic. Such tragedies can be almost entirely prevented if we will banish dogs from all densely populated areas.

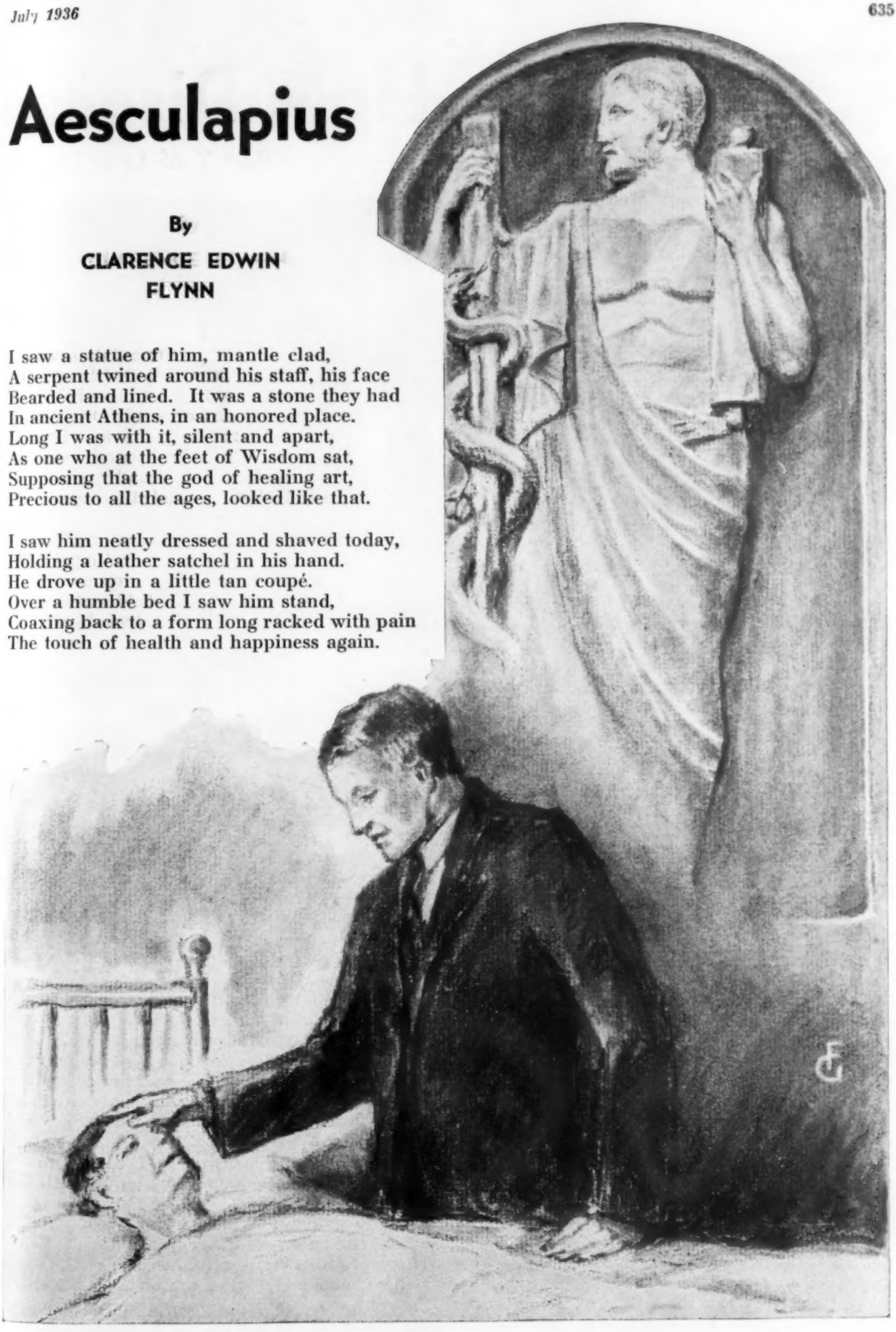
A lover of children will naturally ask: "Are all our city children to be deprived of the experience and pleasure derived from the companionship of domestic animals?" This is a perfectly legitimate question, and I would answer it in the following manner: "Yes, until we become sufficiently adjusted so that every child may have the joy and blessing of country life at least several months a year." This blessing could be provided for practically every child even now, if as a people we possessed the necessary wisdom to organize our social and economic conditions properly. Until we reach that degree of civilization wherein these desirable conditions can be attained the price we are paying now by living with dogs in thickly populated urban areas, particularly in city apartments, is far too great as compared with the advantages that accrue from such association, desirable as they might be under proper conditions. In life one often must choose the lesser of two evils. In this instance, I believe that one should be willing to forego personal pleasure and choose the hygienic and more healthful living conditions.

Aesculapius

By
CLARENCE EDWIN FLYNN

I saw a statue of him, mantle clad,
A serpent twined around his staff, his face
Bearded and lined. It was a stone they had
In ancient Athens, in an honored place.
Long I was with it, silent and apart,
As one who at the feet of Wisdom sat,
Supposing that the god of healing art,
Precious to all the ages, looked like that.

I saw him neatly dressed and shaved today,
Holding a leather satchel in his hand.
He drove up in a little tan coupé.
Over a humble bed I saw him stand,
Coaxing back to a form long racked with pain
The touch of health and happiness again.



Miscellaneous Diseases

THERE IS practical agreement among investigators that leprosy was brought from Africa to America by slaves, and it has since been endemic in certain regions. In later years, leprosy has also come in small amounts from other sources, but Africa was the early and great source of supply.

Trachoma, which has since become such a curse to the Indians, was apparently introduced from Africa. Some of the slavers had on their ships severe epidemics of ophthalmia which, like that of Egypt, was apparently due to mixed infections of trachoma, gonorrhea and Koch-Weeks infection.

Most important of the remaining group of diseases relative to the conquest is suppuration, or the formation of pus. The ancient Peruvians did many successful trephinings, occasionally repeated several times on the same individual. They had no iron, and their operations were done with the crudest instruments of stone and copper. This would seem impossible had suppuration been at all common. Incan medicine, as described by Garcilaso and Ondegardo, was crude and primitive.

North American Indians of the plains resorted to such initiation rites for young men as passing pieces of wood attached to rawhide thongs beneath the pectoral muscles, tying buffalo skulls to these and having the young men drag the skulls until the pieces of wood tore through the muscles and came out.

It is almost incredible to read Bernal Diaz del Castillo's accounts of the numerous wounds received by the soldiers of Cortez and the speed with which they healed. Old Bernal himself had more than forty wounds. Carvajal tells us that a detachment of Orellano's men was surrounded by Amazonian natives and all were wounded, one mortally and several seriously. "The captain ordered that the wounded, eighteen in number, be treated, and there was no means of treatment except a certain charm, and with the aid of our Lord, all were well within fifteen days, except the one who died." Farfan wrote in 1579 that in Mexico those parts of the body which are called congenital, that is, which are developed from the father's seed, do not heal their wounds by first intention. In all other parts he expected primary union, provided that all foreign bodies, such as fragments of bone, bits of hair, arrows and loose pieces of flesh were carefully removed. I was long puzzled as to what parts were called congenital, until I found the following from the Talmud: "Three coöperators are concerned in the making of man; God, the father and the mother. The father furnishes the white sperm, from which come the bones and tendons, the nails, the marrow of the head and the whites of the eyes; the mother furnishes the red sperm, from which

How Disease

Part V of Early Medical

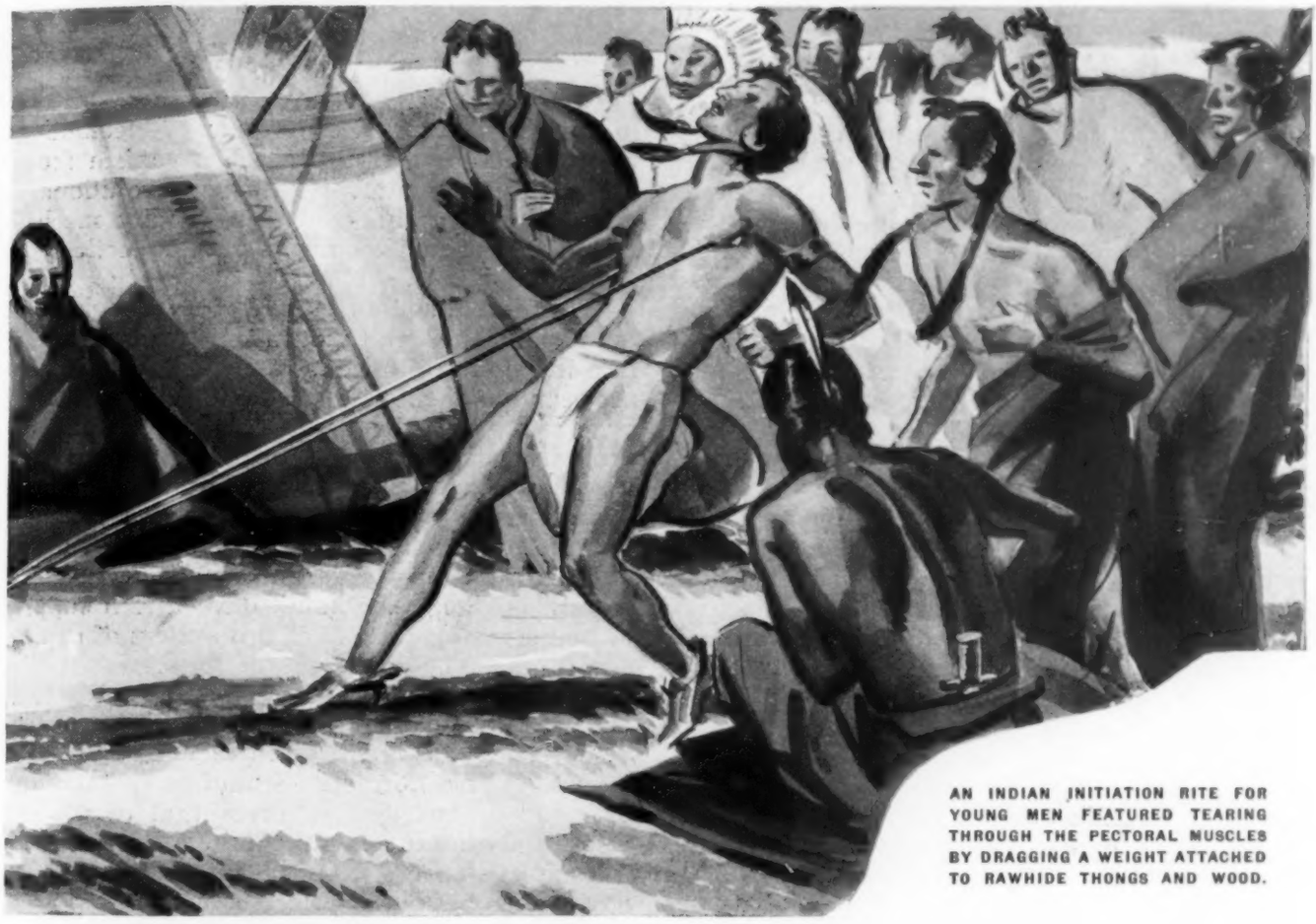
come the skin, flesh and blood, the hair and the blacks of the eyes; God gives the life and soul, the shine of the face, the sight of the eyes, the hearing of the ears, the speech of the mouth, the lifting of the hands, the going of the feet, the understanding and insight. When man's time comes to go out of the world, God takes back his share, that of the parents remains. Then the parents weep and God says, 'Why do you weep? I have only taken back my share.' Then the parents answer, 'As long as your share remained with our child he was protected from worms and decay, but now he is given over to destruction.'"

STARVATION and scurvy were here before the white man, and the same may be true of other deficiency diseases. There are numerous references to goiter, and it is to be presumed that other endocrine diseases may have existed. There are also many references to eczema and asthma, and there is no reason to believe that the coming of the white man greatly influenced the prevalence of allergic diseases.

Came with the White Man

Milestones in America

By P. M. ASHBURN



AN INDIAN INITIATION RITE FOR YOUNG MEN FEATURED TEARING THROUGH THE PECTORAL MUSCLES BY DRAGGING A WEIGHT ATTACHED TO RAWHIDE THONGS AND WOOD.

Verruga peruana and oroya fever, pinta, piedra and chiggers were native to America. It was only in 1872 that the chigger was found in Africa, possibly introduced by freed slaves colonized in Liberia, Sierra Leon or Libreville. It has since spread over all tropical Africa and some neighboring islands, including Madagascar. Chronic arthritis was as common before the conquest as now. In fact, it long antedates man's appearance on earth, being traceable through the ages back to the dinosaurs of more than 100 million years ago. It is a touch of nature that makes all the vertebrates kin.

There are in America, as elsewhere, what may be referred to as diseases of transition; that is, diseases of animals which are becoming adapted to other hosts. Among these are Chagas's disease, a form of trypanosomiasis, or sleeping sickness, which is mild and harmless in the armadillo but very deadly in man; mal de caderas, fatal to horses and cattle but harmless to its ancient host, the capibara; tularemia, a disease of rabbits now recognized as relatively frequent and very serious in man, and Rocky Mountain spotted fever, which is probably derived from an unrecognized animal carrier through ticks.

In both Africa and America there is relapsing fever transmitted by ticks, in each instance an ornithodorus. The two do not produce cross immunity, and it cannot be proved that slaves brought the disease from Africa.

The Indian was subjugated by disease more than by arms or culture. Africa, rich in resources, gold and cheap labor but possessing diseases deadly to the white man and a well immunized population, has come under white control only since modern medicine has offered the white man protection not possessed by the black. Time alone will reveal whether all our preventive medicine will be for the good of the race in those long periods which are dealt with by history and evolution. Present results are excellent, but may it not be that in the long run the race learns best by racial experience, grows strongest through combat and best survives by acquiring resistance through suffering?

THE DUCTLESS GLANDS

● THE FOREMEN OF THE BODY

By Allen S. Johnson

MILLIONS OF years ago, when we existed as an elementary type of sludge in the primeval mud, life presented few of its present-day problems. We probably resembled something found today under a flat stone in the garden. Our environment was dark, damp and dirty, but it supplied an abundance of food and water; it maintained a relatively constant temperature; and, because of our relative immobility, flight from predatory enemies was not yet a problem. When we emerged from this slime and became land dwelling animals, still exceedingly different from man as we know him today, three problems immediately arose: the quest for food and water, the escape from enemies, and the maintenance of a constant body temperature.

The solution of these problems necessitated various architectural changes in the organism, which involved an increasing complexity of structure and of function. All this required millions of years to accomplish; but primitive man finally emerged, capable of fight and flight, capable of assimilating a varied diet, and able to exist in a changing thermal environment by reason of his ability to maintain a constant body temperature independent of that of the external world. Physiologically speaking, he had been made a wanderer.

In this far-off period of history, wandering was essential if man was to discover new food supplies. For he learned long before the time of Malthus that animal life tends to increase faster than the supporting power of the soil. The result of all these changes in the organism's physiology enabled him in a measure to manufacture his own environment, wherever he might be, instead of depending on the surrounding primeval sludge for his body temperature and for food and water.

The development of a supporting skeleton and muscles was a great improvement on the jellyfish type of architecture. The development of a digestive apparatus enabled him to assimilate a complex and varied diet instead of absorbing merely simple substances through an enveloping membrane. A nervous system arose which established communication between different parts of the body and helped to integrate and coordinate their activities. If a many celled organism having a nervous system is painfully stimulated, messages are telegraphed to other parts so that the organs of locomotion may cooperate to remove the organism from the painful stimulus. A further evolutionary achievement in the control of bodily mechanisms was the development of the ductless or endocrine glands.

What is a ductless gland? The glands that pour saliva into the mouth or digestive juices into the stomach or sweat onto the skin surface are seen under the microscope to consist of coils or clusters of cells arranged like bunches of grapes. Each cluster empties its secretions into a tube or duct, which may in turn be joined by other similar ducts, so that the sum total of secretions is eventually carried by one or more ducts to its ultimate destination. The ductless glands, on the other hand, have a rich supply of blood vessels instead of this system of drainage tubes. The secretions of these glands are absorbed directly into these blood vessels and are thereby enabled to circulate through the whole body as chemical messengers, or hormones. These hormones stimulate the activity of some organs and suppress that of others. These activities in a healthy animal are designed to adapt it more successfully to changes in its environment. The perverted activities of the ductless glands constitute certain disease states and represent an overfunction or an underfunction of a gland which is out of step with the ultimate needs of the body as a whole.

PRESERVATION of the individual and preservation of the race are two primary instincts. Unless these instincts are fully developed in the individual and given free rein, either the individual or the race that he represents will fail to survive. The desire for food, the ability to combat a hostile environment by fight or flight, and the instinct for reproduction are of fundamental importance. How do the various ductless glands help the individual and the race in their struggle for existence?

Sitting like a tricornered hat on top of each kidney is the adrenal gland. The central portion or medulla of each gland secretes a substance called epinephrine. Although this substance is highly active when used as a drug, causing a constriction of small blood vessels, a rise in blood pressure, increase in heart rate, depression of the intestinal musculature, and other effects when injected into the body, its

normal function in the body economy is unknown. The outside portion or cortex of each adrenal gland secretes a substance that is necessary for life. The precise manner in which it preserves living processes is not yet fully known.

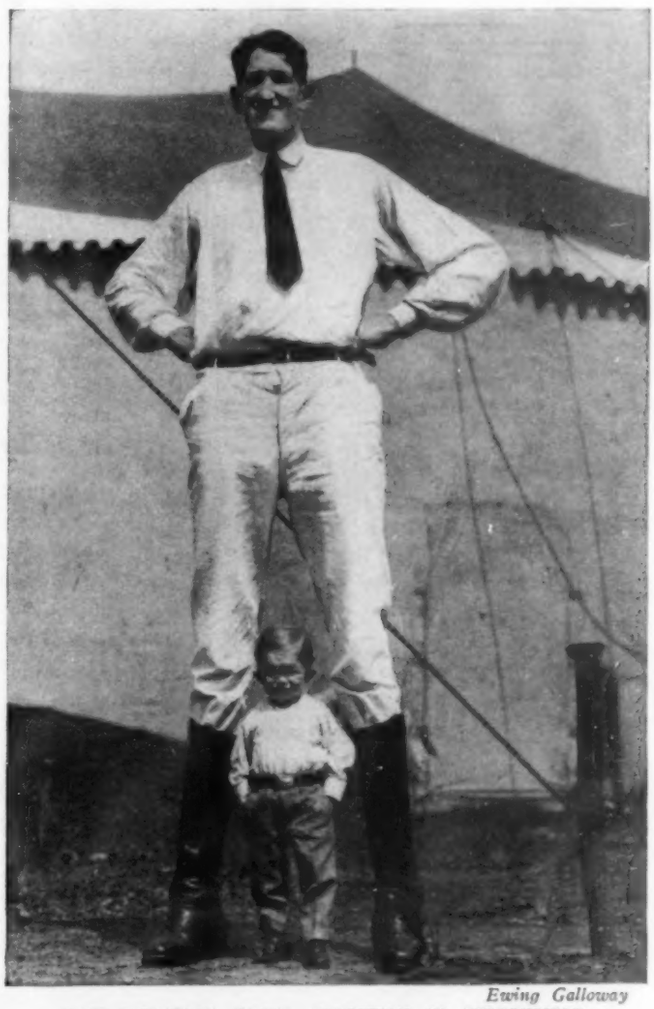
Many may recall Mark Twain's story of the Tyrolese peasant with a goiter so large that he had to push it ahead of him on a wheel barrow. While this country cannot compete with such records we too have our goiter regions. This enlargement of the thyroid gland, just below the Adam's apple, is common in certain parts of the world which for one reason or another have soil and water deficient in iodine. A classic locality, our own Great Lakes region, was once scoured out by a glacier. Iodine is an important element in the hormone secreted by the thyroid gland. The enlargement of the gland in goiter districts apparently represents a compensatory effort of the gland to elaborate a normal secretion in spite of a defective supply of one of the essential raw materials. The goiter is most common in girls at puberty and in women during pregnancy as unusual demands are made on the thyroid at this time. Such an enlargement is not unavoidable, however, for the classic work with the school children of Akron, Ohio, showed that it could be prevented by supplying the individual with the tiny amounts of iodine which had been lacking in the diet.

As a result the function of the thyroid gland is gradually being discovered. In the adult in whom serious deficiency in thyroid secretion occurs the patient who had been normally alert and active grows dull and apathetic. His face grows puffy about the eyes and cheek bones. He gains weight, and his skin becomes thick, coarse and dry, while his hair grows sparse, lusterless and brittle. Such then is the picture of myxedema or thyroid insufficiency in the adult. Fortunately the dried glands of slaughter house animals can make good this insufficiency when taken by mouth, and the myxedematous patient can be restored to normal as long as he uses this replacement therapy.

A CHILDHOOD counterpart to this condition is found in the cretin. He is a stupid, drooling, bandy-legged dwarf whose mental and physical growth became retarded. The condition is more common in goitrous regions. Fortunately, feeding him with thyroid will restore both his mental and his physical development and transform him into a happy, alert, normal child if it is started early enough.

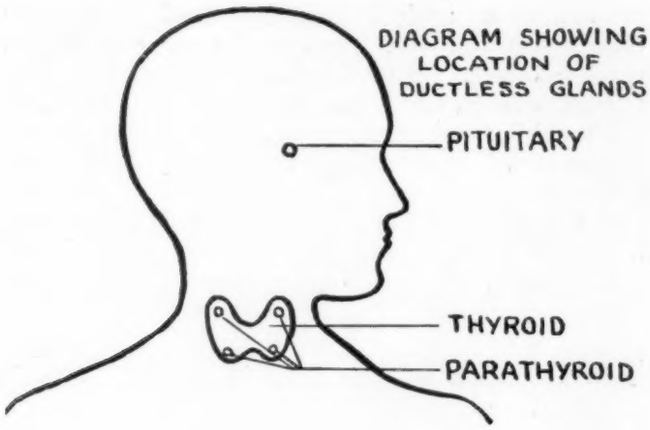
The surgeons long ago noticed that certain patients with goiters showed other mental and physical changes. They had protruding eyes and trembling hands. They lost weight in spite of good appetites. They alternated between nervousness and irritability and boundless energy on the one hand and easy exhaustion on the other. They blushed easily; they perspired easily, and they found hot weather intolerable. Some underwent operations for the removal of the enlarged thyroid and were restored to normal health. Apparently this group represented the clinical picture of thyroid overactivity whereas the myxedematous and the cretin owed their disability to subnormal thyroid function.

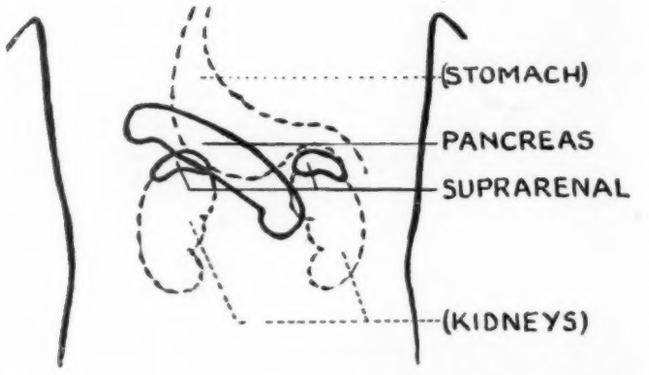
THE secretion of the thyroid gland, then, is essential to growth and normal physical and mental activity. It stimulates the cells of the body to carry on their work. The process of metabolism is a form of oxidation or combustion just like a bonfire. Leaves combine with oxygen in the air so rapidly that they burst into flame. Heat is evolved, and smoke and ashes represent the waste products. Our vital processes are likewise oxidative. Oxygen from the air we breathe is carried by the blood to the tissues with which it combines. The smoke is represented by the carbon dioxide which escapes by way of the lungs. Heat is also produced. The thyroid gland seems to govern the rate at which this vital flame may burn.



Ewing Galloway

THE PITUITARY GLAND SECRETION IS RESPONSIBLE FOR SUCH EXTREMES IN GROWTH AS SHOWN HERE.





Hyperthyroidism represents the forced draught; hypothyroidism, the damper. The nervous, pop-eyed patient with hyperthyroidism has had all his bodily functions put into high gear. The flame is roaring. The wear and tear of tissue is going on at a rate far in excess of normal. His pulse rate is fast because his circulation must be speeded up to serve his overactive tissues and get rid of the needless heat they are generating. No wonder he hates hot weather and complains that his skin is always warm and moist.

RECENTLY an interesting application of these principles was made in the treatment of certain types of heart failure and angina pectoris. The activity of the thyroid gland stimulates metabolism, which in turn puts an increased burden on the heart and circulation. It was hoped that after total surgical removal of the normal thyroid in these patients the administration of thyroid secretion in smaller amounts than were previously produced by the patients' own glands might maintain their metabolism at a lower point where a failing heart might be strong enough to bear the burden without faltering. To a certain extent these hopes have been realized.

Tucked in behind the thyroid gland are several little bodies, the size of shoe buttons, called parathyroids. Their internal secretion regulates the storage and mobilization of lime salts in the body. An inadequate secretion of this hormone results in a type of convulsion called parathyroid tetany, not to be confused with tetanus or lockjaw. Parathyroid tetany is due to a lowering of the level of calcium salts in the blood stream, which makes the muscles unduly irritable. In cases of oversecretion the skeleton is robbed of lime salts, which are deposited in abnormal locations such as the urinary tract. The bones become unduly flexible and easily fractured.

HIDDEN behind the stomach in the abdominal cavity lies the pancreas. Through its duct are poured various vital digestive juices. But scattered through the gland are islets of cells whose secretion is absorbed directly into the blood stream. This is the hormone, insulin, which regulates the storage and utilization of sugar in the body. In the diabetic patient this mechanism is deranged, and an excess of sugar accumulates in the blood and later is eliminated in the urine by the kidneys. There is no known cure for diabetes, but there is an effective treatment; insulin of animal origin is supplied as a substitute for the inadequate secretion in the patient's body. Here again in the normal man is a mechanism which has developed to help him manufacture his own internal environment. Once he has progressed beyond the stage of the simple organism which is constantly filtering nourishment through his pores, he needs a device for storing fuel and doling it out gradually so that his blood stream may maintain a constant supply for the needs of the working tissues.

Within the last few years underweight people not suffering from diabetes have been given insulin in the hope that such a procedure would assist in the assimilation of nourishment and lead to a gain of weight. This can apparently be brought about though the gain is not always permanent. The mechanism seems to be as follows: The insulin given before the meal reduces the amount of sugar in the patient's blood, which in turn initiates contractions of the upper alimentary canal which constitute hunger pains. The net result of all this is an increased appetite which makes the patient eat more than he would ordinarily desire. This is emphatically not a procedure to be tried by the unguided layman, as an overdose of insulin may give rise to serious or even fatal convulsions.

Perhaps the most fascinating of all our ductless glands is the pituitary gland. The ancient anatomists knew of its existence. Because it was hidden away at the base of the brain behind the eyes where the "pituita," or phlegm, was supposed to originate, it was named the pituitary. It has two parts possessing radically different functions. The posterior lobe secretes a hormone which finds its chief use in obstetrics, where it is given hypodermically to increase the

contractions of the uterus. The anterior lobe apparently secretes a number of different hormones, each of which controls the activity of particular glands or body tissues. Among these are a growth-promoting hormone and a hormone which regulates the activity of the male or female sex glands. To the vagaries of the growth-promoting hormone we owe our Tom Thumbs and giants. An insufficiency of this hormone results in a premature cessation of growth, but these dwarfs, unlike the cretins, are apparently normal in other respects and are not mentally retarded. Unfortunately the treatment of this condition is not so simple as cretinism; but great strides are being made in the field of research, and some day it may be possible to restore to these dwarfs a normal rate of growth.

If for some reason the anterior pituitary begins to secrete too much growth hormone before the attainment of maturity has put an end to the growth of the skeleton, the individual continues to grow, and a giant results. Should this oversecretion occur after maturity, a different picture results. No further growth of the long bones can occur because the points from which this growth takes place have been obliterated. As a result, distortion of the skeleton takes place; the hands become coarse, heavy and spadelike; and the face acquires a heavy underslung jaw and protruding brow. The lips and nose become large and coarse. This condition is called acromegaly, meaning enlarged extremities.

The anterior lobe of the pituitary also produces one or more hormones which stimulate the reproductive glands to elaborate their characteristic hormones. These are responsible for the development of the secondary sexual characteristics peculiar to puberty and in the female also initiate structural changes in the generative tract which are essential to conception and to the survival of the fertilized ovum. In the human female there seems to be a rhythmic activity of the anterior pituitary which periodically stimulates the ovary to set loose an ovum and to secrete its hormones whose function is to prepare the uterus for the implantation and nourishment of the ovum should it become fertilized. Still another hormone from the anterior lobe of the pituitary is responsible for the secretion of milk. Within a few weeks after conception has occurred there is a great increase in the amount of ovary-stimulating hormones of the pituitary which escapes in the urine. This forms the basis of the Aschheim-Zondek test for pregnancy. The urine of the woman thought to be pregnant is injected into the vein of a virgin rabbit. Within forty-eight hours this causes characteristic enlargement of the rabbit's ovaries if the woman is pregnant. Most of the accurate observations on the action of the sex hormones have come from the experimental laboratory. But whereas science has made great strides in unraveling these mysteries in the experimental animal, the application of this knowledge to the sick patient is beset with many serious pitfalls.

THE MARTIN FAMILY VACATION

(Continued from page 612)

take a vacation for health, you heard about the selection of a camp site. That is, you heard about it if you could pick any sense out of the good-natured chaffing that goes on among the members of this happy family, who hold each other in highest regard but who simply wouldn't be caught speaking a kind word to each other. Last time we listened in on them they had just selected a camp site, and were starting out to provide for a very important necessity for the evening meal; namely, water. There is a well nearby—but let's listen:

Mary: It doesn't look to me as though George is bringing much water.

Mrs. Martin: No, I should say he isn't. Look at him! Swinging that jug exactly as if it were empty. And balancing the pail on his head!

Mary: He'd never do that if there was water in it.

Mrs. Martin: Oh, I don't know. He might not get away with it, but I don't think he'd hesitate to try it—at least once.

Mary: And look at Dad. He hasn't got anything in his bucket, either, or I'm a Hottentot.

Mrs. Martin *(calling):* John. What's the matter —why, they aren't even coming toward the tent—*(louder)* John!

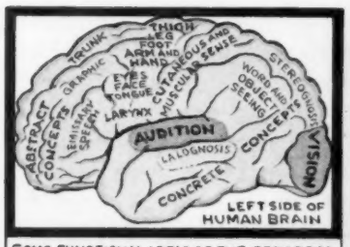
Mr. Martin *(faintly, from a little distance):* Yes, dear?

Mrs. Martin: Whatever are you doing? I'm waiting for water to cook our dinner.

Mr. Martin *(still distant):* Try and get it.

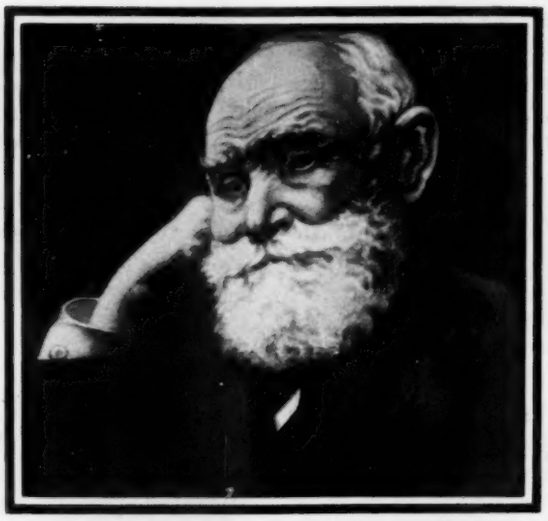
Mary: Well, can you beat that? What do you think ails them?

Mrs. Martin: I'll bet I know. That well is no good, and they never thought of that when they picked the site. *(Continued on page 669)*



SOME FUNCTIONAL AREAS OF THE CEREBRAL HEMISPHERES. MANY OF THESE HAVE BEEN MAPPED OUT TENTATIVELY, THEY REPRESENT ONLY THEORIES. THE AREAS FOR SIGHT, SMELL, SPEECH, HEARING AND THE CORTICAL MOTOR CELLS GOVERNING THE BODY MOVEMENTS FROM THIGH TO LARYNX ARE DEFINITELY ESTABLISHED. ALL PARTS OF THE CORTEX OF BOTH HEMISPHERES ARE CONNECTED IN THE MOST INTRICATE WAY. FOR HIS WORK ON NERVE CORRELATIONS AND THE PROOF THAT THE ACTIVITY OF THE BRAIN IS BASED ON A PRINCIPLE OF REFLEX ACTION NOT UNLIKE THAT OF THE SPINAL AND NERVOUS SYSTEM OF LOWER ORGANISMS, PAVLOV WAS AWARDED THE NOBEL PRIZE IN MEDICINE IN 1904.

THE LEFT SIDE OF A DOG'S BRAIN. THE ARROWS INDICATE THREE IMPORTANT REGIONS OF THE CEREBRAL CORTEX. PAVLOV REGARDED THE CEREBRUM AS A KIND OF SWITCHBOARD FOR THE CONDITIONING OF REFLEXES. HE HAS SHOWN THAT THE DOG MIND AND THE HUMAN MIND ARE GOVERNED BY THE SAME UNDERLYING MECHANICS. THE SAME BASAL PROCESSES ARE AT WORK IN BOTH MAN AND ANIMAL. —ADOLPH BEILIN



PAVLOV INSISTED EVEN IN HIS ADVANCED AGE IN CARING PERSONALLY FOR HIS 500 DOGS. HE LOVED AND PITIED HIS DOGS AND ALWAYS AVOIDED CAUSING THEM UNNECESSARY PAIN. THE DOGS LOVED PAVLOV AND READILY OBEYED HIM DURING EXPERIMENTS. THE OPERATIONS WHICH PAVLOV PERFORMED ON HIS DOGS WERE INDISPENSABLE FOR THE PROGRESS OF MEDICINE AND THE WELFARE OF HUMANITY.

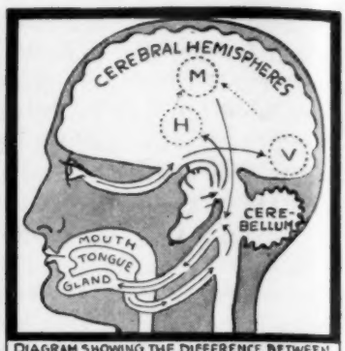


DIAGRAM SHOWING THE DIFFERENCE BETWEEN AN INBORN AND A CONDITIONED REFLEX

WHEN FOOD IS PUT INTO THE MOUTH, IMPULSES FLASH UP TO THE BRAIN ALONG A NERVE FROM THE TASTE ORGANS ON THE TONGUE. THESE IMPULSES TRAVEL TO THE PART OF THE BRAIN CONTROLLING THE SALIVARY GLANDS BY MEANS OF A NERVE CONNECTION. THUS THE MOUTH WATERS, AND THE FOOD IS LUBRICATED FOR SWALLOWING. THAT IS AN UNCONDITIONED REFLEX. THE LEARNING MECHANISM WORKS BY MEANS OF SIMILAR NERVE CONNECTIONS (SHOWN DOTTED) IN THE CEREBRAL HEMISPHERES. WHEN WE SEE APPETIZING FOOD, IMPULSES FROM THE EYE TRAVEL TO THE VISUAL CENTER (V) IN THE CORTEX. A CONNECTION BETWEEN THIS CENTER AND THE MOTOR CENTER (DOTTED ARROW TO M) CONTROLLING THE SALIVARY GLANDS IS THUS FORMED, AND THE MOUTH WATERS. THAT IS A CONDITIONED REFLEX. SIMILARLY, WHEN WE LEARN THAT A CERTAIN GONG HERALDS FOOD, WE FORM A CONNECTION BETWEEN THE HEARING CENTER (H) AND THE MOTOR CENTERS CONCERNED.

NERVE IMPULSES PASS THROUGH GANGLIONS TO AND FROM THE CORD AND BRAIN. PAVLOV HAS SHOWN HOW THE ENTIRE SYSTEM WORKS TOGETHER IN GOVERNING THE BRAIN AND BODY.

1849— IVAN PETROVICH PAVLOV —1936

The Darwin of Physiology

By ADOLPH BEILIN

SO IMMENSE were the scientific achievements of the late Ivan P. Pavlov, who died in Moscow on February 27, that even in the early foodless days of the bolshevik revolution, Lenin ordered that Pavlov's 500 dogs be provided with food; for without those dogs, Pavlov could not possibly have established the certainty that secretion of the gastric juice in the stomach is directly controlled by the vagus nerve; and he could not otherwise have determined the general function of the mechanism of the higher sections of the central nervous system, as revealed in his study of conditioned reflexes. Also, what is perhaps still more important, he could not have accomplished the same exact analysis of the most complex and enigmatic aspect of the living being; namely, the psychic activity of the brain.

A superb experimenter, magnificent surgeon and powerful thinker, Pavlov was truly a great scientist and a great man. Always the objective, scientific observer, it is recorded that he noted his own muscular reflexes and nerve reactions during the final hours before his death from influenza. Despite an almost complete collapse and a pulse of 150 he continued his own mechanistic analysis, calling attention to his involuntary muscle movements, thus keeping his mind on the bedrock of facts to the end. By his death the cause of science not only lost an exemplar of its best traditions but suffered an irremediable misfortune.

Born on Sept. 26, 1849, at Ryazan, Russia, Pavlov came of a modest family of country priests. When a youth, he became interested in the natural sciences. After completing his preparatory training at the University of St. Petersburg, he entered the Military Medical Academy of the same city (now known as Leningrad), graduating in 1883 with the degree of Doctor of Medicine. He then devoted the remainder of his lifetime to teaching and to laboratory experimentation.

Thanks to Pavlov and his dogs, many phenomena of mental instability can now be accurately interpreted, reconditioned and often cured. Fears, phobias, hates and queer pleasures that seem to have no rational cause are now understood as reflexes conditioned by some earlier experience in which the stimuli that produced them were associated with frightening or profoundly disturbing events. Pavlov accumulated a vast store of data bearing on the relation of the brain to the nervous system and the digestive processes to the learning mechanism in a dog. He regarded his dogs as simpler men

and women, and he demonstrated that dogs possess temperaments, weaknesses and individual peculiarities not unlike those of mankind. In the presence of insurmountable problems, Pavlov proved that dogs become upset and succumb to nervous breakdowns in a manner akin to human beings.

A dog will snatch at food. A man will jerk his hand away from a hot iron. These are examples of unconditioned reflexes, and they constitute the equipment with which all animals face life from birth. By modifying the environment or altering certain conditions, Pavlov changed the simple reflexes into complicated, confused or conditioned reflexes. A bell was rung every time a dog was fed. After a number of similar repetitions, the dog would secrete saliva merely at the sound of the bell even though there was no food in sight. The intelligent dog thus reacted to an idea. This is the learning mechanism in both man and animal. Space permits only the skeletal citation of another, more intricate example of learning, which shows how the psychic activity of a dog is analogous to that of a human being.

Pavlov built up a conditioned reflex in a dog by giving it food at the same time a luminous circle was projected on to a screen in front of it by means of a lantern. Next, a rather flat ellipse was similarly projected, but without the food. Soon the dog learned that the circle meant food while the ellipse did not. The shape of the ellipse was then gradually altered, and it became more and more circular from day to day. This change was made in order to find out at what point the dog would begin to confuse the two shapes. Suddenly, when the limit was nearly reached—the ellipse being almost circular in form—the behavior of the dog became very excitable. Its inhibitions disappeared, it struggled, yelped and became unmanageable even outside the experimental room. The problem had been too much for it. So Pavlov started again with the first circle and ellipse, taught the dog the old differentiations again, and its nervous trouble slowly disappeared.

For his research on the salivary glands, Professor Pavlov was awarded the Nobel prize in 1904.

WALKING REVELATIONS

(Continued from page 628)

being poised directly over the ball of the forward foot the upper portion of the chest is far ahead of it. The promulgator of this walk has never been taught to "tuck in" the hips.

THE SETTLER

This person carries the weight of the body in the middle of the spine. It hangs over the lower and hollow portion of the spine. The abdomen is thrust forward because of the relaxed muscles but may not appear very prominent as this walk is most often found in the unduly tall, thin girl who consciously or unconsciously is trying to conceal her real height. She succeeds only in drawing attention to it. If the parts of the body were to be placed in proper relation to one another, she might be a fraction taller, but she would look 100 per cent better. She seldom takes the trouble to correct herself but settles down on her spine to wait calmly for the time to come when some one else will make the effort to straighten her. She generally walks with relaxed knees and so escapes a perfect rocking chair walk.

THE ROLLER SKATE WALK

When the arms are held closely to the side and not allowed to move, and the body is otherwise perfectly poised, a laugh-provoking gait ensues. This is especially true when the pace is speeded up, for the position necessitates short mincing steps, and the speed seems great enough to involve the use of invisible rollers.

This is not a complete survey of the variations to be found in the walk. There is, for example, the Dead Man's Walk, so perfectly portrayed in the motion picture "Frankenstein." In this gait the upper portions of the body, especially the arms, hang apparently lifeless, and the feet stumble along utterly devoid of spring and elasticity. There are also many combinations of these various types, such as a waddling gait, due to turned-out toes plus a turtle neck or a head thrust far forward because of a coat with a poorly constructed collar; or the disjointed walk, in which not a single joint in the body seems staple, or the clown's shuffling up-turned toe wiggle. Examples might go on quite indefinitely with odd revelations of the walk, but perhaps sufficient interest is aroused so that the reader will look about to make a few discoveries of his own.

It is certain that a woman must look to her walk, if she would have ease and grace of movement and retain the slim, symmetrical outlines of youth, long after exercises are shelved and forgotten. Exercises have a definite place in helping her to attain more quickly the necessary muscle balance which makes effortless walking possible, but they should be only a means to an end. After all, the walk's the thing and when once it is perfected, exercises of a corrective nature are no longer needed. The perfect walk will maintain a perfect carriage which will float its possessor along as if she were indeed truly hitched to a star.

LITTLE SIS

PINK DRESS and little white sandals had been racing to the street all afternoon. Far down the winding concrete that led to the neighboring city, Martha Mae had looked. But looking was no use.

Grandmother Clark came across the lawn from the small green cottage next door to say so. "Eat this cinnamon bun, Honey, and stop watchin'." Her face crinkled in a sunburst smile. "Watched pots never boil. Quit watchin', Sweetie Pie, and see how quick your ma and brother come."

Martha Mae's chin quivered. Go on, smile, she told herself. You don't want Grandmother to see how scared you are, do you? Even brand-new 12 year olds don't cry. Go on, pretend. Bite your cinnamon roll. That's better. You're no quitter. You stayed home of your own free will. Sure, so Roger could take the Kroll family who had offered to pay expenses.

Without looking, really, Martha Mae could see the sun lying down in its billowy robes of azure and gold for the night. She'd honestly tried not to notice when the town clock had struck those seven silvery notes. But nobody could help knowing when the June sun pulled day into that golden retreat after him.

Her small voice wavered. "'Course, Mother prob'ly didn't get in on the afternoon train."

"You worrying, child?" came Grandmother's voice, honey-kind.

"But something mighta happened."

"But again, it might not. Never costs a mite more to believe the best."

Martha Mae smiled foolishly, a real smile, this time. Most likely, Mother had stayed with Daddy at Sunnyslope five whole hours longer. He was already better, and Mother was the best of medicines.

But nobody quite knew when Daddy would be well enough to make money again. Roger wasn't going to college because he wouldn't use money Daddy might need. "Chins up," he'd said. "What's a year?" He was sweet. Not crabbing, nor anything. Just as if, when it took years to get to be a doctor like Daddy, he had years to waste.

Roger was why Martha Mae had been poring over those books of old myths and flower legends lately. Only Mother knew her secret. But now, as night pressed closer, Martha Mae wanted Grandmother to know too.

"I'm trying to make money for Roger's college." The small girl held her breath. If Grandmother laughed, she just *couldn't* be her adopted grandmother any more.

WITH JACK-IN-THE-PULPIT PRESIDING, MR. MUSHROOM

OBLIGINGLY BUILT A GREAT PLATFORM FOR THE SPEAKERS.

By
HENRI H. MURRELL

But she didn't. "That so?" Just as though she were talking to grown-ups, Grandmother said it, rocking.

Martha Mae felt all tingly. "You know the Garden Club State something—fed—"

"Federation, Honey?"

"That's it. They're giving prizes to children 12 or under who write the best stories about a garden. Five hundred, three hundred and one hundred dollar prizes. For college. I told them if I won any I wanted my brother to have it. He's ripe for college already."

Grandmother nodded. "That's a good word —for a gardener."

"Mother loved my story." And so, in turn, did Grandmother. They sat silent in the quiet garden. Lovely it was, with nothing over their heads but God's starry velvet. Playful breezes patted Martha Mae's flushed cheeks; tousled her short, soft yellow curls; whispered secrets in her eager ears.

Somewhere a clock struck nine, and lovely dark hugged them close. Occasionally, Grandmother hummed softly. No longer was Martha Mae worried. She snuggled into her steamer chair. Stars winked, playing their thrilling "I spy." There were hosts of stars, marching, managing always to keep out of each other's way. Their glow cast a spell on the garden. Unearthly. A summer hush. Madonna lilies lifted glistening heads like angels, listening. Roses breathed, and the air whispered their sweetness. Great, sighing trees lifted wishful arms. Fragrance, blended of all the flowers, rode the breezes. Martha Mae snuggled lower and lower. It was beautiful, so strangely beautiful, that all the flowers seemed to speak . . . they *were* speaking.

Arguing, rather. Such fussing. Little Golden Gleam Nasturtium clapped tiny hands to her ears and ran to the front of the garden.

"Please, please stop. You've been quarreling about whose history is best for days and days. You all talk at once. Tell your stories, but do please tell them one by one. Then, when you have finished, vote among yourselves as to who is greatest. Jack-in-the-Pulpit, you preside."

What excitement! Mr. Mushroom obligingly built a great platform. Three baby mushrooms made the steps. Iris swept forward, tall, stately, lovely. The garden murmured softly as she said in rich, low tones:

"My ancestor was Princess Iris, messenger of Juno. Some claim the rainbow was her magic bridge from heaven to earth. Others, that it was the trail her many colored robes left behind

ONE TIME, WHEN A MAN DISCOVERED THE RAINBOW'S GOLD AND WAS HURRYING HOME WITH IT, THE GOLD FOUND A HOLE IN THE BAG AND BEGAN TO LEAK OUT. FROM EACH PIECE OF GOLD A BUTTERCUP SPRANG TO LIFE.

her. She wore robes of mauve and purple clouds which the sun painted gold and crimson. Two handsome peacocks, with spread tails like rainbows, drew her golden chariot."

"Oh, my!"

Iris smiled. "She loved the waters of the earth, like myself. They reflected her beauty. One day, she landed at a mountain lake. A clump of stately flowers, blue as the waters themselves, charmed her. As she fingered their frail petals lovingly, drops from her own rainbow hues brushed the flowers.

"Some children carried them to a garden festival. But no one could name the beauties. Finally someone cried: 'Surely, Iris has kissed this bloom!' So in my rich and velvet loveliness, my shaded hues, you will forever find the rainbow!"

Gathering her fragile draperies, Iris bowed to great applause. Little Golden Gleam thought surely nobody could do better. But Narcissus swaggered up in all his golden trappings. His great eyes flattered Golden Gleam as he passed. Her heart pounded madly. Mounting the platform in two steps, he bowed airily as only gay, graceful Narcissus could bow.

"In the early days, Echo, a lovely talkative nymph, fell in love with a handsome hunter, Narcissus. But Narcissus couldn't return that love. So Echo begged Venus to make him suffer as she was doing." Again, his ardent glance set Golden Gleam's small heart pounding.

"But revenge neither helped Echo nor made her happy. She pined away until nothing was left but her beautiful voice. Shocked at her shameful lack of pride, the gods sentenced her to haunt rocks and lonely dells, and forever to repeat the last words that fell upon her ears."

"Poor thing," Madonna cried.

"Poor nothing," Narcissus snorted. "Venus remembered her prayer. Narcissus was drinking at a lonely pond one day. A lovely face looked up at him. He smiled. The other lips smiled. Narcissus cried out his love and tried to take the lovely being in his arms. But she darted away. Waiting until the waters quieted, Narcissus tiptoed up to watch. There again, that curly tumbled head; those eager eyes, that face, anxious and sleepless. But always she darted away when he tried to touch her."

The garden sighed. Golden Gleam's ruffled skirts stirred, as she half rose, in pity.

"Poor Narcissus could neither eat nor sleep. He died, little dreaming the face he had loved was—his own reflection." Narcissus was so beautiful no one could laugh. "The gods changed the poor hunter's wasted body into a flower like me: one who still loves quiet pools and secret dells." He straightened proudly.

"In China, I'm called Chinese lily, the poor man's emblem of thrift and care. In a dream a fairy once told a poor young man to carry back to his stony acre the bulbs of the flowers among which he was sleeping. 'Plant and care for them, and behold they shall perform a great miracle for you.'

"The young man worked hard. He forgot about that promised wealth. When at last his

stony fields were clothed with wondrous shades of deepest orange, yellow and white he was wild with joy. He gave to all who came to see. His flowers won for him all the wealth his selfish brother had lost. For he who earns not, soonest spends."

Narcissus bowed low to deafening applause. Golden Gleam hoped terribly that he would win.

Dainty little Anemone was lifted to the platform where she began timidly, "They call me the windflower." She shuddered. "And sometimes the death flower."

"Oh, no, no!" The garden objected.

"You see," Anemone explained, "Adonis was a mighty hunter, but reckless. Venus warned him about that. One day a wounded creature gored poor Adonis. Venus cried when she saw nothing could be done. 'But you shall return each spring, beloved Adonis, so all earth may delight in you.'

"Next spring where he had fallen, I came, my garments streaked with blood, and short-lived like the young hunter. The wind blows my blossoms open and my petals away. In China I'm called death-bloom and am planted in graveyards. Peasants hold their breath and run past me with dread, thinking I taint the air with death." She smiled. "I like America best. Here, happy children cry with joy at sight of me: 'Spring flower!' I love them for it."

As Jack lifted the tiny mite down, every hand clapped furiously as if to deny those evil tales.

Neither Goldenrod nor Purple Aster would budge without the other. "We belong together, you see," they cried. "Once," Goldenrod explained, "two little girls wanted to do something to make people happy."

"But they didn't know what to do," Purple Aster interrupted. "When they asked the old witch who lived on the mountain, she frightened them—"

"So terribly they sobbed 'We want to be together,'" Goldenrod mimicked. "The witch smiled. And never again were those children seen at the foot of the hill. But next morning, goldenrod bowed, and purple asters waved from the same hillsides."

"We tell the secret," the little folk sighed together, bowing just as they bow today from every hillside. Everybody applauded but old Mr. Pine who sometimes grumbled about hay fever.

Tulip, clothed in scarlet satin, swept forward. "Long, long ago, an old lady cradled the pixie babies in her breast. But her cruel son plowed the ground where the pixies dwelt. The poor old lady sorrowed away. The homeless pixies missed her sweet lullabies. They went to her grave to weep. When lo, they turned into beautiful flowers, tulips. At night, other pixie babies climbed into their cups, closely cradled from all harm. And to this day, some one still sings lullabies to them."

No one applauded. The garden wiped its eyes, remembering how faithful Tulip closed her arms each night so that the frightened fairies of the world might still find safety. But Tulip looked hurt, and the garden burst into thunderous approval.

Buttercup, plump, short and waddling, set his feet firmly and smiled like sunshine, although he seemed to know he had no chance to win. "Once, a man actually did find rainbow's gold," he cackled. "In a meadow. Afraid lest he would have to divide his treasure, the miser hurried to hide it. The gold found a hole and dripped out as he ran. Seeing his loss, the miser ran back. He bent to pick the gold, but he picked buttercups instead. And he didn't want us." How Buttercup laughed. "But we didn't care. We keep on smiling. We give joy to the whole earth, but selfish people like the miser never do."

The deafening applause puzzled modest little Buttercup, but he liked it.

Papava (Poppy to her friends), swished forward, gorgeous and breath-taking in red velvet. Her black eyes held every one spellbound. "My long-ago ancestress was a young princess who was spoiled and bad tempered. They sent her away with a sweet sunny child, Little Blue Corny, to learn better ways. When the wanderers grew hungry and tired, Papava ordered a farmer to build them shelter with his sheaves."

"Oh, my!" The garden was shocked.

"Yes, in spite of the fact that sheaves meant bread for some one. The farmer and Corny begged, but it was no use. Papava said she was the king's daughter. He must. When they'd moved in, lightning struck the shelter. But next spring, out of that charred heap, two flowers

MARTHA MAE BREATHLESSLY OPENED THE LETTER, A BLUE SLIP OF PAPER FLUTTERING TO THE GROUND.

arose: one of wondrous blue loveliness, the corn flower, and the other, a flaunting rich red beauty —me. People called them innocence and sin, but I don't think that is so. For years I've done my best. I've done all I can to bring beauty into a beauty-hungry world."

Well, you should have heard that applause.

Poplar was next. Mr. Mushroom looked so frightened every one whooped. But Poplar spoke from where he stood, at the entrance gate.

"The Sun King's messenger once passed at the edge of the forest. 'Trees, did you see the pot of gold that's been stolen from Rainbow?' he demanded. They shouted 'No,' and my ancestor shouted with the rest. 'Then raise your arms.' They did, my ancestor, proudly with the rest. But lo, the gold fell from his branches. He hung his head in grief and shame. He was a very honest tree. He had been asleep when the gold was hidden in his branches. But the others laughed and teased him. It hurt. He lifted his great arms again and prayed for foregiveness. 'I shall stand this way that you may know I hide nothing from you, Sun King,'" Poplar's great voice boomed.

"At first he was laughed at, like an umbrella turned wrong side out. His arms ached for a time. But he kept his word. And now, we other poplars want to grow as straight, as openhearted and as fearless as our ancestors. People truly love us for our upright ways!"

Really, that applause was deafening.

Jack pounded for order until Balsam had to bind his bruised hand. He asked whether all had spoken.

"Yes," they cried.

"We will now ballot," Jack announced in his best pulpit manner. "Golden Gleam, prepare the ballots. Number, please. Remember, only those who spoke must vote. . . . Have all voted? If so, collect the ballots. Delphinium, please help tally."

Delphinium flushed with pleasure. Jack knew she was the loveliest thing in anybody's garden!

"Narcissus, one," Golden Gleam read.

"Narcissus, one," Delphinium repeated in her fluted, lovely voice.

The garden waited breathlessly. Finally, Delphinium read, "Narcissus, one; Iris, one; Buttercup, one," and so on to the end. Jack leaned far over his pulpit to search their faces. Never, never, never, in all his life had he seen such shamed pink faces.

"Why," he cried, "we've settled nothing. You're just where you were. *Each person voted for himself!*" With that, Jack started laughing. So did everybody, and those who had voted laughed the merriest. Jack laughed until he fell out of the pulpit and cracked his chin. Martha Mae laughed too.

"Come, come, darling. You must have been dreaming." The small girl sat up, and she looked very straight right into the lily of the valley bed where Jack resided. But she saw only his shining green leaves, which promised bloom another spring.

"Did you hear, Grandmother? I mean—the flowers speaking?"

Grandmother laughed softly. "I almost can. Golden Gleam and Jack, just as you said."

"But just now I saw them, truly. Just like my story. It's *real,*" Martha Mae whispered. "I'll always see them, just as you said. But goodness, there are the folks!"

Such a joyous homecoming! Daddy was better. Coming home in September. Going to be all right. Only, they'd have to take good care of him. Would they? Who knew how better than they?

In a silence, Martha Mae whispered, "Mother, I saw them—the flowers, I mean, speaking."

"Bless you. Of course, or you'd never have been able to write it so sweet. That reminds me. Coming down on the train tonight I met the state secretary. She was chatting about the contest. I told her my little girl had tried. When I'd told her your name, she handed me a letter she had meant to mail tonight—to you. But she wouldn't tell me what was in it."

"Mother! A truly letter!" Martha Mae opened it in breathless haste. A blue paper fell to the table. Martha Mae poked it toward her mother. "You read. What does it say?"

"Precious! It says $500!"

"Five hundred dollars for my story?"

"Read your letter."

The small girl handed it to Roger, just in on the secret. "You r-read. M-my eyes are b-bad, I guess." Everybody laughed. It was all that kept them from crying.

Dear Martha Mae Page:

All the judges voted first place for your story. We'll always remember a small girl who worked in a garden with Mother—and God. You've taught us that flowers are characters, like people. Most of all, we'll remember that a garden teaches people to be generous. If you won anything you wanted it for your brother, Roger. We like that spirit. We think it grew in the garden of your heart. So, our best wishes to you, and—Roger.

Sincerely,

Elizabeth Jayne, Secretary

Roger's brown hands cupped his sister's small face tenderly. Joy tears, not sorrow, rolled down his cheeks. "My Little Sis!" he breathed as he hugged her close, close, close.

Martha Mae was excited and suddenly very tired. But she could hear well enough, she thought, snuggled there against her beloved brother. She listened. Yes. Sure enough, from far away came the clapping of joyous little hands. The garden was celebrating too.

New Books on Health

TENNIS FOR TEACHERS

By Helen Irene Driver, B.A., M.S. Price, $2.50. Pp. 191. Illustrated. Philadelphia: W. B. Saunders Company, 1936.

THIS book is written for the use of teachers and advanced students of tennis; yet it is presented in such a readable and nontechnical form that it is easily followed by those less familiar with the racquet. It begins with a short history of the sport and continues, through the general rules and equipment needed, to the practice of the game itself. Good form, rather than accurate placement of the ball, is considered more important in the early instruction of those who would play tennis, and the author believes in retaining the individuality of the pupil in developing the strokes. Helpful suggestions are made for handling the many problems which arise in the teaching of groups as well as of individuals. Clear diagrams and illustrations supplement the text, and programs for lesson planning and tournaments are given to meet the needs of various groups. The author concludes with a short bibliography for both teachers and pupils. Although the book is adapted to the teaching of girls and women, the principles and general method apply equally well to the instruction of boys and men.

FRANCES G. KLAN.

THE HUMAN FOOT

ITS EVOLUTION, PHYSIOLOGY AND FUNCTIONAL DISORDERS. By Dudley J. Morton. Price, $3. Pp. 244. Illustrated. New York: Columbia University Press, 1935.

THIS IS undoubtedly the most scientific study of the human foot ever completely presented in the form of a book. It is a scholarly presentation of research and clinical deductions. The author's knowledge is based on years of study of the evolutionary development, physiology and functional disorders of the human foot. Few men, if any, have so thoroughly mastered these three phases of the foot.

In the section on evolution the foot is traced through every stage in its development from the early vertebrate limbs of fishes to the human foot. The evolution of the bones and muscles of the foot and leg are presented in every detail.

In the second section the physiology of the human foot is presented from the point of view of support and transportation of body weight. Therefore the chapters include a study of the center of body weight and its relation to foot function; the weight distribution and axis of balance of the foot in stance; the structural and postural stability and the muscular balance of the foot; gravity, propulsion and the angle of gait in locomotion, and the mechanics of the foot in walking and running.

Because of his knowledge of evolution, physiology and anatomy of the foot, the author is exceptionally qualified to present his ideas of the functional disorders as described in the third section. Dr. Morton has also had clinical experience, and as a result his opinions based on scientific data are basically sound. They impart a logical approach to orthopedic treatment of foot disorders.

He has revealed in a logical manner the reason for treatment, without the traditional clinical reasoning based purely on practical experience handed down from one generation to another. The therapy is not empiric.

Every orthopedic surgeon should read this book for by doing so he will be better able to relieve his patients of foot disorders.

SIDNEY SIDEMAN, M.D.

FOR STUTTERERS

By Smiley Blanton, M.D., and Margaret Gray Blanton. Price, $2. Pp. 191. New York: D. Appleton-Century Company, 1936.

THE THEORY of stuttering and stammering expounded in this book is that a psychologic conflict accounts for these phenomena and that they are not speech defects at all in the ordinary sense but expressions of emotional conflict buried in the subconscious. This is in general accord with most of the more modern workers and definitely in conflict with those who make a direct attack on the stammering and stuttering by breathing exercises, singing and drilling in the technic of speech. The authors incline rather definitely to freudian concepts of emotional conflicts, anxiety neuroses and symptoms akin to stammering and stuttering. The book is not well organized, and it gives the reader only a hazy impression of just what the authors mean, unless he goes back and rereads over and over again. While it will undoubtedly be a useful book the reviewer gets the impression that it might so easily have been made a better one by a more concise and simplified presentation of the facts for the lay reader.

W. W. BAUER, M.D.

THE PSYCHOLOGY OF DEALING WITH PEOPLE

By Wendell White. Price, $2.50. Pp. 256. New York: The Macmillan Company, 1936.

ALL THAT this book says could be summed up in two words: "Be tactful." Perhaps there are some persons who take themselves seriously enough to go about consciously setting the stage for each action in their dealings with other people, looking in the book for the rule to apply to the situation and then conscientiously applying it. For such persons, this is the book. A footnote says two others of like character are to follow, though perusal of this book does not reveal any good reason for more of the same. It is a collection of platitudes whose triteness is excelled only by its naïveté. W. W. B.

Cry-Baby Gets a Vitamin in Her Hair

By PHILIP JARED

"SEE, I WASHED MY FACE!" BRAGGED CLARIBELLE, THE CRY-BABY. "WELL, IT HAS JELLY ALL OVER IT NOW," SAID HER MOTHER. "NO, NO, TAKE YOUR HANDS AWAY FROM YOUR HAIR. IT'S IN THERE NOW."

MOST OF the time little Claribelle Answith was not a cry-baby at all. Old Teaser called her that because it made her cry louder after she was already crying. From his 9 year eminence he could not see why he should not be cock-of-the-walk over her 6 year old insignificance. Of course Cry-Baby did not share in this high-handed point of view at all, but she knew that loud wails were her best defense against him. Dr. and Mrs. Answith or even Old Sock, who was a senior in high school, and The Dumb Cluck, who felt her importance as a sophomore, would come to her aid many times for no other reason than to spare their eardrums.

"They fight like cats and dogs all the time!" declared their mother. "Now what is the trouble?"

"Oh, Mama!" The Dumb Cluck was calling, but Old Sock went along to see what all the row was about.

"Quiller knocked one of Claribelle's teeth loose!" the indignant Dumb Cluck disclosed. That was Old Sock's title for his sister Judith. She thought he was pretty terrible too.

"Why, Frederick Quiller Answith! . . . Come here, Claribelle. Let me see," said Mrs. Answith.

"Wah-h-h!" wailed Cry-Baby all the louder.

"Do stop crying until I can find out about your tooth! Claribelle, stop crying!"

"Aw, I didn't hurt her a-tall!" protested Old Teaser indignantly. "She's an old Cry-Baby!"

Mrs. Answith was tenderly wiggling Cry-Baby's sharp little incisor. "Ow-w-w-w!" yowled Cry-Baby in a manner which told Old Sock that it was more a bid for sympathy than from pain. He was about ready to go back to his reading.

"You're always beating on her," The Dumb Cluck scolded Old Teaser. "If Mama doesn't spank you sometime, I will." Old Teaser's eyes fell before her withering glare.

"Dumb Cluck," spoke Old Sock sarcastically, "have you ever heard of a deciduous tooth?"

"Whatever you're talking about doesn't keep it from hurting Claribelle," blazed The Dumb Cluck angrily. "Who are you, an authority on teeth, or something?"

"You said it," answered Old Sock, sad because of her abysmal ignorance. "It is a deciduous tooth, isn't it, Mama?"

"Yes-s!" agreed Mrs. Answith. She was only the mother of this gang and a graduate nurse, retired!

"Can I help it if she can't catch a football?" insisted Old Teaser, trying to vindicate himself. He felt not a bit of gratitude toward Old Sock.

"Never mind now!" his mother admonished. "Claribelle, your tooth was coming loose anyhow . . ."

"And you'll be a toothless old granny!" Old Sock teased. He started back to his book, followed by a resentful glance from his mother.

"Maybe Father will give you a nickel if you'll work it loose and get it out," said The Dumb Cluck consolingly.

"Says you!" Old Teaser was jealous. He was thinking of a model airplane, priced 25 cents, for which he would almost sacrifice five sound teeth. He felt to see whether any of his own were loose.

Now Cry-Baby was all smiles. She wiggled her loose tooth happily. She had attained the doubtful status of family heroine. She had something big to show her Daddy when he should return home. Sniffing disdainfully at Old Teaser she returned to her exclusively owned playthings. He left for parts unknown.

DR. ANSWITH had telephoned that he would be late for dinner, so Mrs. Answith called the rest of the family in to the dining room to start eating. I did not realize it, but I was about to learn something more about children. I had already found out that Old Teaser was that way because he was bluffing about an unconscious "inferiority" feeling. I could understand, before this, how Claribelle yowled every time he appeared to notice her. I could even understand how she was more or less consciously trying to be everything that Old Teaser was not, so that she would stand a bit more superior in the regard of the rest of the family. She was affectionate whereas he was not, and it was gall and wormwood to his little ego to see her being petted. . . . A combination butler, yardman and chauffeur can learn a lot about a family if he has a mind for it.

No sooner had Cry-Baby arrived at the table than she stretched a hand out toward the jelly dish.

"Claribelle!"

"Uh-h-h!" whined Cry-Baby.

"Now you must eat the rest of your dinner too," her mother lectured. "You can't just live on desserts all the time. You will never have any good teeth unless you eat better."

"Aw, she don't know how to eat," declared Old Teaser importantly. He had decided to show Cry-Baby up and even the score.

"She *doesn't* . . ." The Dumb Cluck corrected his grammar.

"Zut!" zutted Old Sock, taking advantage of the opportunity to fix a new word in his mind better. "Let her be a runt if she wants to." He frowned with one eyebrow to warn The Dumb Cluck that she should remain within bounds.

"But Papa says that if children don't eat sufficient mineral-bearing foods . . ." But he anticipated her.

"Such as spinach, celery, carrots, milk, eggs, cheese—er—meat, green leafy vegetables—ah—in other words, a good general diet. Why, they may have scurvy if they don't eat fruits; or rickets if they don't have sufficient milk and vitamin D or sunlight. . . . Zut! Cry-Baby was trying to save herself from getting scurvy tomorrow by eating jelly tonight." Old Sock was rude and devastating with his sarcasm.

"MAMA, I'll eat bread and butter with my jelly," persisted Cry-Baby.

"She'll get vitamins A, B and C, besides fat, starch and bulk," was Old Sock's professorial defense. "Tomorrow she'll eat . . ."

"You forgot to mention the protein in the bread," The Dumb Cluck interrupted.

"A mere oversight, I assure you. . . . Now, tomorrow Cry-Baby will probably refuse to eat anything but bread and milk, or spaghetti, cheese and tomatoes. Her milk foods will contain calcium, among other minerals, which will be hooked up with phosphoric acid. She will have had a supply of vitamins A and D in her system, and it will grab the calcium and phosphate to stick in her bones. If there is any calcium left over, then there's no reason why she won't have a tooth. Now I don't see . . ."

"In the dark!" Old Teaser heckled him, neither knowing nor caring what the lecture was about.

"Huh?" exclaimed Old Sock, coming back to earth and frowning with both eyebrows. "Young sprouts are always tender," he said significantly.

"You forgot to mention vitamins E, F, G and Q," The Dumb Cluck reminded him sweetly.

"Well, doesn't she eat whole wheat cereal with cream and sugar every morning? She gets E there. Once in a while she eats some of these blinking vegetable salads with lettuce and other such rabbit food in them."

"Where does she get her Q?" asked Old Teaser flippantly.

"Why, the same way you do, off your face."

"He means by that," The Dumb Cluck explained, "that there isn't any Q yet and that you came to the table with a face that should have been washed."

"That's right, Quiller," said his mother. "I think you had better go do that now."

"Uh-h-h!" groaned Old Teaser disgustedly as he made a half-hearted attempt to arise from his chair. "Why can't I wait until I'm through eating?"

"I washed my face!" bragged Cry-Baby.

"Well, it has jelly all over it now. No, no! Take your hands away from your hair, Clari-

belle. You have jelly in it now!" scolded Mrs. Answith.

"That's all right, Mama," The Dumb Cluck remarked with a withering glance at Old Sock. "The vitamin B in the jelly will prevent her hair from having beriberi. What's on her face will keep her from having pellagra, or something. The professor, there, will probably agree that Claribelle just absorbs her food by outside contacts just like some—well, I won't mention it."

"THAT might be better," agreed Mrs. Answith dryly, her patience at the cracking point. She wished that Doctor would come to relieve her of all these vitamins flying about in the air. "What you all should do is eat your food and quit this running fire of brilliant repartee."

"What's that?" asked Old Teaser with a cleaner face.

"What's what?"

"That 'running fire' stuff, repartee?"

"In common parlance, wise-cracking."

"Now ask her what common parlance is," said The Dumb Cluck, "and she'll tell you it's ordinary talk."

"The argot of the day, the slang," mumbled Old Sock between chews on his "rabbit's food" salad and vitamins.

"Children!" exclaimed the exasperated Mrs. Answith. "Is this a rag-chewing contest or a dinner? . . . Now quiet down, your father is coming."

"Hello, everybody," was Dr. Answith's greeting as he kissed his wife. "You seemed to be having a slight discussion as I came in?"

"Just Old Sock lecturing on vitamins," said The Dumb Cluck. "He was getting bogged down."

"I say, Junior," said his father half seriously, "never become bogged."

"Aw, he was just tryin' to say his alphabet," scoffed Old Teaser. "He got bogged after E!"

"Humph!" snorted Old Sock, determined to exhibit his knowledge. "Vitamin E has to do with—oh, well it hasn't been completely proved yet."

"Well, Junior," sighed Dr. Answith wearily, "I see you have been reading my journals again."

"He's getting a hump on his back and a hollow in his chest like a bookworm," jeered the more athletic Dumb Cluck. "He insulted Mama's salad by calling it vitamin G bearing rabbit's food."

"I notice he has eaten his rabbit's food," observed Mrs. Answith.

"Certainly," Old Sock defended himself, "I shouldn't want to come down with a case of pellagra, or something. Even if I'm not fond of vegetables like some Dumb Cluck I know, don't wish anything like that onto me!"

"We won't," his father assured him.

"Judith erred," said Old Sock thoughtfully. "She said that the jelly on Claribelle's face would keep her from getting pellagra."

"How odd!" remarked the doctor absently. "Yes, that is an error, Judith."

"This rabbit food . . ."

"Please, Junior!" protested Mrs. Answith.

"Oh, all right then," apologized Old Sock. "These green vegetables and Cry-Baby's favorite carrot have vitamin G in them. That's what keeps her from getting pellagra."

"Very good, Junior, very good," agreed his father gravely. "Still, the thing which is most outstanding for its deficiency in this ménage is something not found in its dietary, thanks to your well trained mother."

"What's a ménage, Daddy?" piped up Old Teaser.

"I was coming to that," said the doctor, nettled. "If you would look at the word menagerie carefully. . . . I'm sorry, Quiller, I'm about to do the same thing you children are doing. I mean to say, that if every one of you would quit trying to show how superior you are and how much you can tease each other, your vitamins might do us all more good. I say, how about making a bargain that we shall eat the well balanced diet just as your mother puts it before us, and quit eating vitamins and chemicals? Good food is excellent, but arguments are bad sauces."

"Thank you," said Mrs. Answith, coloring slightly at his compliment.

"Just the same, Old Sock got bogged on F," insisted Old Teaser.

"I'll unbog him," said his father wearily. "Let's ignore food chemistry, or I shall deliver a lecture on ego-itis."

"Aw!" said Old Teaser incorrigibly, "I don't wanna. . . . Well, I guess it won't keep me long."

"Ha, ha, ha!" Only Cry-Baby laughed.

THE BARBER

When I go to the barber's
I always behave;
And the barber says, "Well,
Do you want a shave?"

Because I behave
Like a man, you see,
He just can't believe
I am only three!

By
Beatrice Creighton

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

Can the Teacher Help Children to Bear Their Physical Defects and Peculiarities?

THE SEVENTH OF A SERIES OF EDITORIALS ON THE MENTAL HEALTH OF CHILDREN

THERE was a sound of breaking dishes in the kitchen. Mrs. Thompson rushed in to see what was the matter. She found her 13 year old son Francis, who had rather reluctantly consented to wash the dishes, standing at one end of the kitchen throwing the dishes toward the opposite wall with vehemence. Plates, saucers, cups and glasses followed each other in rapid succession to crash against the wall and fall in fragments. There was a hard, set look on the boy's face. Mrs. Thompson seized him by the collar and shook him soundly. She scolded and remonstrated with him but apparently in vain. He made no reply to her many questions.

Francis had always been a good boy. Even as a youngster he had loved to run errands and help his mother. He had always done pretty well in school. But within the last year the report of his work had not been so satisfactory. The teacher had also made some complaints about his behavior. Around home he had seemed rather absent-minded, somewhat dejected and even inclined to be surly, but he had never refused to help his mother. And now he had suddenly become a destroyer of property. What had come over him?

Mrs. Thompson talked over the matter with Francis' father. Having been a boy himself perhaps he could tell what was the matter and what needed to be done. However, Mr. Thompson could give no help. To him it looked as if Francis was just plain mean. He had smashed the dishes out of pure cussedness. The father felt that Francis needed a good strapping. But Mrs. Thompson would not listen to this. She felt that Francis was dreadfully unhappy about something and that if they could find out what that something was it would be possible to help. But she had not the faintest idea.

Mrs. Thompson next went to Miss Bryant, Francis' teacher. Miss Bryant was an intelligent and sympathetic listener. She took a keen personal interest in all her pupils. For some time she had noticed that Francis was not doing so well in school she told Mrs. Thompson. He had always been a good boy. No, she had no suggestions to make for the present. A chance remark that she had heard one day on the playground led her to suspect, however, that Francis was being unduly teased. She wanted a little time to investigate. Of one thing she was definitely certain, and this was that Francis was in trouble. With this information, Mrs. Thompson went home feeling somewhat relieved. She felt that Miss Bryant was a good friend and that she would finally give valuable help in solving the problem.

Miss Bryant worked with great tact. Among her pupils was a boy named Philip Boyd. Since they were very good friends, she invited him to go on a bird walk with her the following Saturday morning. They had a wonderful trip during which they saw many different birds. On the way home she deftly guided the conversation into channels that led to Francis. By cautiously inquiring as to whether some of the children had not found fun in teasing Francis, she found that they were calling him "nosey." One new boy, Roger Wyndham, was a special tease, she learned, and he was the leader of the group. After he had called Francis "nosey" he would laugh uproariously, with the others joining in.

At last the problem seemed clear. Francis had become so sensitive concerning his unusually long nose that he was most unhappy. This explained his lack of interest in his schoolwork as well as the breaking of the dishes. His resentment toward the world had led to the impulse to hurl his mother's dishes across the kitchen.

The final solution to the problem was clear, although difficult to accomplish. A way must be found by which to change the attitude of a number of people. Francis must be taught to forget about his long nose. Roger Wyndham and Francis' other classmates also required a lesson about teasing. Finally Mr. and Mrs. Thompson needed to have an insight into the real problem.

Miss Bryant lost no time in acting. She had a little talk with Philip Boyd and suggested that he say some pleasant and complimentary things to Francis—to which he agreed. Similar suggestions were dropped to other members of the class. She felt that she needed to make a special effort to enlist the cooperation of Roger Wyndham.

It came about rather easily. One day she loaned him an interesting story book and offered to lend him more. Feeling grateful he said he wished he could do something in return for Miss Bryant. This was her opportunity. Tactfully she referred to Francis. They had a talk about teasing, and Roger finally consented not only to cease teasing Francis but to do several nice things for him.

To change the attitude of Francis was of supreme importance. One afternoon he stayed after school to talk about a play that was to be given by his class, and cautiously she approached the problem. She greatly surprised Francis by her intimate and sympathetic insight into his life. She told him that nearly everybody had something about himself that was unwelcome, but he had learned to get along with it cheerfully and successfully. She told him about the boy who had a darkly colored birthmark which extended over a large part of one of his cheeks. He might have been cross and hateful when other boys attempted to tease him, but he merely refused to notice it. He won honors at school and finally became the president of a great university. She told Francis about the talents he had in drawing and suggested that he might become an architect if he would forget about his nose.

Miss Bryant now felt that in the future the children would tend to

tease him less. He would always be teased though unless he accepted his peculiarity and learned to laugh at it.

Mr. and Mrs. Thompson were told of Miss Bryant's progress with the problem, and as a result of this method of handling, the situation soon began to clear up. Francis learned to adjust himself, and the end of the school year found him with better grades and happy.

A NEW HEALTH EDUCATION COURSE FOR A HIGH SCHOOL

DONALD S. LACROIX
Amherst High School
AMHERST, MASS.

Every high school has its own individual problems in planning health courses. Here is a description of a systematic course organized for the Amherst High School, Amherst, Mass.

HEALTH education for school children has occupied an important place in the lower grades for some time, and in many school systems it has been emphasized all the way through the eighth grade. When the pupils reached the senior high school or ninth grade, health work consisted of physical education, smatterings of hygiene in biology and mere suggestions in some of the other sciences. No opportunity was given for the continuation of health education which had been so carefully planned and taught in the earlier school years. Health education stopped with the pupil's entrance to the ninth grade.

School administrators and teachers have recognized this weakness in the secondary school and are rapidly trying to remedy the situation. The Amherst school system has been no exception in this respect, for Mr. Ralph Haskins, principal of the Amherst High School, has visualized an improvement for just such a weakness. Early in 1935 he offered a plan whereby health education could be given a definite place in the high school curriculum. In September of the same year the new course was put into operation, and it is now required of all pupils in the ninth grade.

As organized at present, the plan works out as follows: The girls meet the health instructor while the boys are having gymnasium or physical education, and boys meet the health instructor while the girls are having gymnasium or physical education. On Fridays, boys and girls meet together in the auditorium. In this way each pupil devotes three periods a week to health education and two periods to physical education.

An outline or syllabus is placed in the hands of the pupils. This contains questions which are to be answered in notebooks and lists of references to be consulted in answering the questions. The references, available in the classroom, consist of modern health textbooks, pamphlets, government and state bulletins, maps, charts and manikins. No one book is used strictly as a textbook, so the knowledge must be gleaned from a variety of sources. Much use is made of free material distributed by the larger insurance companies, and state and government agencies. Any material that contains a great deal of advertising matter is kept from the reference shelf unless it is to be used in pointing out some of the inconsistencies of modern "high

pressure" selling of nostrums and quackery. On Fridays the pupils have the opportunity of listening to a speaker, usually a specialist in the line of work which is being studied at the time, seeing motion pictures on health topics or listening to special reports by other members of the class.

The course is outlined to include studies of the history and development of modern health methods, food and nutrition, fresh air and sunlight, hearing and seeing, exercise and posture, sleep and rest, water supplies and sewage disposal, diseases, home and highway safety, first aid and mental health. Much emphasis is placed on safety because of the tremendous annual death toll from accidents. A thorough discussion of the nervous system and some psychologic fundamentals are presented in the mental health section. Social hygiene is handled through talks and lectures by competent men and women specialists which are given only before segregated groups. First aid instruction is given by a trained person and leads to a Junior Red Cross certificate for those who pass the requirements. Throughout the year, community health is emphasized, and the pupil's own importance to the community is stressed.

Furthermore, the health education course is constructed on a more or less flexible plan to allow for individual differences. It is organized so that it coincides with the health work given in the eighth grade and with general science and biology in the ninth and tenth grades.

In this manner of arrangement the work starts with a review of the health knowledge acquired in the lower grades and gradually becomes more scientific and more difficult as it proceeds. At the same time there is an attempt to shift the point of view of the pupil from the self centered aspect to a more "public centered" one; that is, an attempt is made to show the pupil that his better understanding of health not only helps him but also will help his community, of which he is an important part.

At the close of the year broad generalizations are drawn from all the studies to review the work as a whole and to leave with the children the attitude of "service through fitness."

A HIGH SCHOOL CLASS GETS THINGS DONE

MARJORIE VAN HORN
Camden Senior High School
CAMDEN, N. J.

Instruction in health is usually so academic that it seldom has any effect beyond the classroom. Here is the story of a high school class which called on a community for social action and got results.

THE seniors in our high school were studying child welfare as part of their health education program. We had been having reports from the committees who had looked up material on child labor laws in New Jersey, maternal and infant death rates, prenatal clinics, the health aspect of the housing situation, and juvenile delinquency.

The committee investigating juvenile delinquency had just finished reporting a list of the causes of crime among children, including broken homes, bad companions and lack of things to do and places in which to play.

The recreational report followed. Once more delinquency was mentioned as a result of poor recreational facilities. During the subsequent discussion on the great lack of free recreation in our own city a girl volunteered, "We are

always talking about causes and means of preventing this and that. I propose that we as a class do something about securing some play spaces for the children of our city."

The idea was accepted. It was decided to ask the "city fathers" to close off as "play streets" some well chosen blocks in the congested areas of the city and to ask the board of education to leave the school yards open for play purposes until dark.

The class then elected a chairman and a secretary and divided itself on a voluntary basis into the following committees: publicity, booking, petitions and speaking. Each committee elected its own chairman who, with the general chairman and secretary, formed the executive committee.

The executive committee decided that posters should be made and placed in conspicuous stores throughout the city; speeches should be given in all sorts of clubs to stir interest; the city should be charted for desirable play spaces, and signatures should be secured to three petitions. One petition asked the city to designate certain streets as play streets; a second asked the board of education to leave school yards open until dark, and the third was signed by the residents of the streets to be blocked off as play streets.

When the committees started to function, things began to happen. Twenty-five posters were soon made and placed in prominent spots. Several articles appeared in the regular columns of the local paper. The booking committee secured engagements that kept the speech and petition committees hopping to keep up with the schedule. The police commissioner who was interviewed approved of the plan and urged the girls to secure as many names to the petitions as possible. Several prominent citizens added their influence in securing entrée to clubs and organizations where speeches could be made.

A four minute speech was learned by the eight speakers whose job it was to appear at various P.T.A. groups, women's clubs, service clubs and church organizations. A member of the petition committee went along with each speaker to pass the petitions and secure the signatures. Girls were excused from school at any time in order to keep their engagements.

The Lions Club, Rotary, Business and Professional Women and the American Association of University Women are just a few of the groups that gave their support to the campaign.

Meanwhile, part of the petition committee started to interview all the residents on the streets chosen for play streets. They secured the signatures of about 90 per cent of those asked.

The end of the term came right in the midst of the big job. Many more speeches were booked; all the streets were not covered, and many signatures were yet to be obtained. As most of the class was graduating, the executive committee appealed to the next class studying child welfare for volunteers to carry on. Twenty did so. The general chairman and secretary volunteered to come back to school the next term to guide the volunteer group.

At the present writing there are 503 signatures to the street petitions and 425 signatures for school yards. Residents of fifteen streets have expressed their desire to see safer play spaces for children in their neighborhoods. In a short time this will be turned over to the city commissioners for consideration and expected action.

A LESSON PLAN ON TEACHING SAFETY IN THE THIRD GRADE

BELLE L. DICKINSON
ARCATA, CALIF.

We are glad to welcome Miss Dickinson again to our columns. This time she offers us a carefully constructed plan for teaching safety in the third grade. Notice the reactions which she expects to get from the children.

THE safety game devised for use in the third grade proved an effective means of emphasizing "safety first."

Aims

To show need for care on the highway; to develop a feeling of responsibility for personal safety and the safety of others.

Motivation

The puppet show you gave last week about Seppi, the little woodcarver, was interesting because you told so many things you had learned about the Swiss people. You told how all the family worked to make a living in their high mountainous land, and you told how the children played.

Some of the Swiss children's games are different from those you play, but there is one certain game which Heidi and Seppi play, and if you are wise, you play it, too! So do boys and girls in the hot dry land, Arabia, and in the hot wet land near the Kongo river. The Eskimo children play this game, and so do the little Dutch children in Holland.

What is it? Your poster there on the wall reminds me of it. "Play in safe places." Yes, safety is a game that every one should play. Do you all know how to play "Safety?" Do you know the rules of the safety game?

Here on the board are listed some things I have seen boys and girls doing which made me wonder whether they knew how to play the safety game on the highway. I have called this list "Safety Don'ts." Do you see why? Read the list, and see whether you have seen any one make one of these mistakes.

Safety Don'ts

Cross the road when the red light shines.

Play ball on the highway.

Ride your bicycle after dark without a light.

Run in front of an auto.

Carry an umbrella down over your face.

Forget to look where you are going.

Cross the railroad track without looking both ways.

Now let's change this list so it will help us play the safety game on the highway.

The first rule will read, *"Stand still when the red light shines; wait until you see the green before you cross the street."*

Who will change the next one? *"Play ball in your own yard or in a vacant lot but never on the highway."*

Now let's change the rest. Which rule is hardest for you to remember? Copy this rule, and we will put it up near your seat.

Activities

1. Discussion of the safety game.
2. Silent and oral reading of "Safety Don'ts."
3. Checking those seen.
4. Formulating safety rules.
5. Giving reasons for remembering rules.
6. Copying rule hardest to remember.
7. Drawing pictures of the right way and the wrong way to play the safety game on the highway.
8. Reading and discussing the "Safety Alphabet."

SAFETY ALPHABET

SIXTH GRADE

A is for accidents on the highway.
B, bicycles lighted except during the day.
C is for crossing when nothing's in sight.
D for the drivers who keep to the right.
E is expense that we needlessly face.
F, the green fields for our kites the best place.

G says to "go" when you see the green light.
H for the hill—but don't coast at night!
I is for injuries we want to prevent.
J, the dark jail where the careless are sent.
K, keep wide awake. Don't gaze at the stars!
L is for look. Look out for the cars!
M is for millions on accidents spent.
N is for no. No one knows where it went.
O is the officer on street and highway.
P is for all of the games that we play.
Q is for quickly to learn and remember.
R, rules for a safe New Year's Day till December.
S stands for signal and safety and sign.
T for the traffic waiting in line.
U is umbrella held o'er your head high.
V is your view of the traffic going by.
W, watch your step upon hill or in hollow.
X, this 'xcellent advice you should follow.
Y is our youth of all ages the best.
Z, here's to their practice of safety with zest.

FOLLOW-UP WORK

Perhaps during the art period you would like to show with crayon the right and wrong ways to fly a kite, carry an umbrella, ride a bicycle, coast on the hill or cross the street or highway.

A CHALLENGING PROBLEM IN HEALTH AND HOME ECONOMICS

AMANDA BELL
Norristown High School
NORRISTOWN, PA.

To stimulate a class to make an attack on some practical problem which requires field work helps to make health teaching attractive. Miss Amanda Bell did this by setting up an ideal family for which the class made plans. Perhaps this is a plan which you can use in your classes.

NUTRITION and cooking are the first two units of a correlated course in health and home economics which is being tried out this year in the tenth, eleventh and twelfth grades of the Norristown Senior High School. The class meets five times a week and carries full credit.

The instructors feel that the work is more interesting and worthwhile as the two subjects are so closely correlated that while the pupils are having the experience of cooking, the theories of nutrition are interspersed in class discussion.

During the first class meetings an imaginary ideal family of five, father, mother, 15 year old daughter, 10 year old son and 2 year old baby was set up. It was decided to make the father's yearly income $1,000 as this most closely corresponded to the average income of the families represented by the class members. After a discussion of the large items of the budget, a food budget was set up, which was divided into weekly units of $8. Thereafter all meals planned and dishes cooked in class had to fit into that limited budget.

The pupils were given an assignment to secure the prices of staples, meats and vegetables from the various stores in town. A comparison of these disclosed some interesting facts. Because at that time it was fall and the height of the fruit season and because the groups had decided it would help their budgets if they could can fruits and vegetables while they were inexpensive, the first week of cooking was an experiment in various types of canning.

After the division of the budget the theories of the main food group (fruits and vegetables; fat and fatty foods; efficient proteins; sugars and sugary food, and minerals and vitamins) were introduced in their general relation to health and the needs of the body. During this discussion of the value of foods, the pupils, working in small groups, prepared as many as possible of the appetizing and inexpensive dishes in each food division.

After this, the emphasis was placed on the study of calories and the caloric value of various foods. At this time the individual requirements of the imaginary family were estimated, and meals were planned accordingly. Attempts were always made to satisfy the individual likes and caloric needs of the family and also the budget restrictions.

The importance of vitamins in disease prevention and health maintenance then came in for consideration, followed by a week of planning meals with the added emphasis of vitamins.

Toward the end of the unit the work was summarized by small groups, each being responsible for one of several projects.

The dining room of the home economics unit was turned into a "Calorie Inn," and balanced luncheons were planned and served by the pupils to relatives and friends for 15 and 20 cents.

Appetizing and attractive model trays were set up in the school cafeteria with foods chosen from the daily menus suitable for the high school student.

During the entire course, white rats were used to prove points discussed in the theory classes. A controlled pair kept on a normal diet showed what good food can do for the individual; a pair fed mainly on sweets soon were far from sweet tempered, and those fed coffee instead of milk became extremely nervous and irritable and much smaller than the controlled pair.

As the teaching unit drew to a close some students chose as their projects the teaching of simple nutrition lessons, which the rats exemplified, to the first, second, third and fourth grades in the elementary school.

A final written assignment for all students called for a paper which contained the following items: (1) an imaginary family and their individual characteristics; (2) individual nutritional needs of the family according to age, sex and activities; (3) four weeks' menus planned to meet those needs and worked out to comply with the five food groups, calories, vitamins and budget, and (4) a market order for each week complying with the budget requirements.

To Contributors: — *The editor of the School and Health Department will be pleased to receive articles dealing with the solution of concrete and practical health education problems in the school. Articles must not exceed 1,000 words in length. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of* HYGEIA, *67 Clyde Street, Newtonville, Mass.*

NEW HEALTH BOOKS
for teachers and pupils

A STUDY OF THE CAUSES OF ABSENCE AMONG TEXAS SCHOOL CHILDREN

By Jeanie M. Pinckney, M.A., Alice H. Miller, C.P.H., and Carl V. Bredt, B.S. Pp. 78. The University of Texas: Bureau of Nutrition and Health Education, 1935.

THE bureau has conducted a careful inquiry into the causes of school children's absence. Among the observations are absences due to reportable diseases. Colds ranked first at every school level. Among nonreportable diseases, headaches ranked first; among injuries due to accidents, the predominant were cuts, sprains and bruises. The authors are not content merely to list several pages of their observations, but they incorporate fifteen definite recommendations based on these investigations. Many of these recommendations refer to actual health teaching in the classroom. This is an excellent type of investigation which should be undertaken by other universities.

SAFETY AT HOME

Price, 10 cents. Pp. 24. Chicago: National Safety Council, 20 North Wacker Drive.

THE author and artist have cooperated to make this one of the most attractive booklets on safety. There are numerous illustrations on the margin of each page to illustrate the text. The print is excellent and the combination of white and blue colors in the pages is pleasing. The subject matter is carefully organized around the different problems of home safety. The kitchen is regarded as the most dangerous room in the house. "It is an especially hazardous place for children. Here is where mother works with pointed knives and shiny pans. Here is where she turns little knobs on the stove and wonderful things happen." The living room, bedroom, halls and stairways, basement, porch, yard, garage, closets, attics, storeroom and bathroom also come in for their share of attention. This booklet should be in the hands of every grade teacher and every special teacher of health and safety.

TRAINING THE TODDLER IN SAFETY

By Garry Meyers. Price, 25 cents. Pp. 29. New York: Greenberg, Publisher, Inc., 1936.

"LET'S begin with the baby. School age is too late," says the author of this book. We have heard much about training the school child in safety, but Dr. Meyers strikes a new and important note in his insistence that this training should begin with the toddler. He quotes grim statistics showing the large number of little children that are killed annually in accidents. It is quite futile to teach them through persuasion and reasoning. It is necessary according to the author to turn our backs on the recent and now prevailing theory of child training. We must inculcate in the child automatic responses, safety inhibitions, which can be easily acquired in infancy. In this educational procedure "the old-fashioned spank" is recommended. Of course, one must know when to spank and when not to spank. It is a fine art. Dr. Meyers with his usual facility in writing has presented for parents and others some very practical and sensible ideas on training young children in safety.

COMMON CONTAGIOUS DISEASES

By Philip Moen Stimson, A.B., M.D. Pp. 437. Philadelphia: Lea & Febiger, 1936.

THIS manual is designed to give the reader the latest information about common contagious diseases. In its present revised form much additional information has been given concerning the recent developments in the knowledge of these diseases. While the book is prepared for use in medical schools and for nurses, teachers of hygiene in high schools and colleges should find it valuable for general reference.

LEARNING HOW TO LEARN

By Walter B. Pitkin, Harold C. Newton and Olive P. Langham. Price, 92 cents. Pp. 194. New York: McGraw-Hill Book Company, 1935.

IN WRITING this book the authors have had in mind helping young people in a vital way to be successful. One way to do this is to give them an insight into their own learning. The authors say: "If you will learn how to learn you can cut the work of high school and college almost in half. That will leave you free either to progress at double speed in your studies or to devote much more time to outside interests." Since reading in our higher schools is the basic activity in learning they suggest certain things that students may do in improving their reading. The book is original and is really an applied psychology. It is suggested that it be used with English classes, thereby making it unnecessary to add another subject to the curriculum. The book is well written and contains exercises which should be challenging to the learner.

(Continued on page 661)

QUESTIONS AND ANSWERS

Psychoanalysis—Psychiatry

To the Editor:—I should like to know the difference between psychoanalysis and psychiatry. Is either of these practices fully accepted by the medical profession? What is the percentage of cures in psychoanalysis? After medical examination has failed to account for such symptoms as fatigue, insomnia and nervous tension, is the patient expected to choose one of these forms of treatment? Or does the psychiatrist or psychoanalyst assume responsibility for selection of cases? If treatment is started, does the doctor or the patient determine its duration and the frequency of consultations, especially if the patient feels he is not improving? Are all psychiatrists and psychoanalysts followers of Freud, Jung or Adler? Are these schools inharmonious? Is it important for the patient to see a practitioner following the school which best interprets his temperament and his problems?

J. T., Illinois.

Answer.—Psychiatry is that branch of medicine which is concerned with the elucidation, treatment and prevention of mental disorders; while psychoanalysis is a special technic for the study of the mind and for the treatment of mental disabilities. Psychoanalysis is becoming more and more accepted by the medical profession as a fruitful means of gaining a more thorough understanding of mental operations. Its therapeutic value has never been accurately determined on the basis of percentage of cures, although experience indicates that the nature of the mental disorder and the age of the patient are important considerations as far as treatment is concerned.

A thorough physical examination is a prerequisite in every case of nervous and mental disability, and psychiatric treatment includes attention to the physical as well as to the mental status. Whether or not psychoanalysis is indicated is a question for the physician or psychiatrist to decide.

Sigmund Freud was the initiator of the psychoanalytic technic, and he has developed theories concerning the mental life that, in the main, are becoming widely accepted. Jung and Adler have established separate schools, and each has a considerable following. It is impossible for the patient to judge for himself whether he should take advantage of the treatment provided by analysts of the Freud, Jung or Adler schools.

Soaps

To the Editor:—What materials are used in the composition of toilet soaps? Could these materials composing the soaps be harmful or dangerous in any way? Can soap be stored away without the quality being affected in any way? Does the quality of the ingredients vary in the different brands of soap? If so, how?

F. M. B., New York.

Answer.—Soap, if properly made, is virtually noninjurious to anything that water alone will not harm.

The raw materials in soap are the same today as they were in the earliest time; namely, fats, oils and alkalis. The number of available materials today is extensive and includes tallow, lard, bone fat, skin grease and many oils, such as olive, coconut, corn, palm, peanut, linseed, castor and fish oils. Different combinations of these produce soaps with different characteristics, but if the ingredients are high grade their nature is not as important as the care and skill with which the soap is made.

Provided a person is not sensitive to any of the ingredients used, they are not harmful.

Soap can be kept indefinitely. Even though the color may change or the soap lose some of its water content, no harm will result.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Mental Disease: Identical Personalities

To the Editor:—Are there case records of persons who, because of diseased brain tissue, have momentarily felt themselves to be two identical personalities? I do not refer to multiple or split personality.

D. S., California.

Answer.—In cases of mental disease frequently the victim has the delusion that he is the President of the United States, or the king of England or some other notable personage, and at the same time he retains in large measure his former personality. In a sense one is dealing here with two personalities in one individual. In such delusional states there may be no demonstrable organic changes in the brain.

The Cause of Pemphigus

To the Editor:—What causes pemphigus in a baby less than a week old? Is it apt to recur? Is it contagious? If so, how? Is it similar to or can it be caused by impetigo? Is impetigo contagious?

Mrs. H. W., New Hampshire.

Answer.—Pemphigus of the newborn is a form of impetigo. It is a superficial, pustular condition of the skin which often spreads rapidly because the germ, a form of staphylococcus, escapes with the pus when the blisters break. If all the infant's clothing is not boiled and if the germ is not killed by the local application of the proper treatment, new spots soon appear. When impetigo occurs in older infants and children, it often takes the form of adherent crusts which usually persist for weeks. If the scabs are not completely removed before the proper treatment is applied and the underwear boiled, new spots usually appear. The disease may be passed on from one child to another if proper precautions are not taken to destroy the germ that causes its spread.

. . . during the child-bearing period

Radiograph of a living child before birth.

X-RAY examination furnishes facts that bring peace of mind during the strain of first pregnancy . . . that fortify confidence throughout the entire child-bearing period. It supplies needed information in pregnancies if the patient's child-bearing history points to possible complications.

Many physicians' routine procedure now includes x-ray examination in every pregnancy. The first radiograph discloses the size and shape of the pelvis . . . This information becomes part of the record. The second survey shows the degree of development and position of the child. In later pregnancies, x-ray examinations provide facts that forearm the physician against untoward developments at delivery.

When the physician suggests x-ray examination early in the term, and again about the eighth month, he takes precautions for mother and child. Charts proper procedure. Guards life and health.

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Mail this coupon for the free Eastman booklet, "X-rays and Health." It contains interesting information on the subject of x-ray examination and pregnancy.

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"As Joan's temperature is normal, may she get up today, Doctor?"
"No, not yet. We want to avoid any possible later complications."

Prevent Serious After-effects

THE wise mother gets specific instructions from her doctor and observes them carefully. She takes no needless chances. Weakened hearts, kidneys, lungs, defective hearing or eyesight and other physical impairments may result from many diseases. They are frequently more to be dreaded than the original ailment.

Even a case of measles may be followed by serious consequences. Its many possible after-effects are the doctor's chief concern. Attacks of measles may lead to abscesses of the ear or pneumonia. The kidneys may also suffer from overstrain, developing unfortunate complications in later life. Or the eyes may be badly affected.

Do not let your child, when just recovering from scarlet fever, get up and be active until the doctor says it is safe to do so. This is very important, because the heart and kidneys may be affected to some extent by scarlet fever. Careful nursing may be necessary after the child is apparently well.

Colds and whooping cough, too often lightly regarded, also require careful nursing. Bronchitis, pneumonia and even tuberculosis may follow such seemingly trivial ailments.

Tonsillitis is a distressing ailment which should never be ignored. Repeated attacks of tonsillitis may lead to heart trouble in later years. But as a rule, if the tonsils receive prompt attention, lasting damage is prevented.

Two or three months after your child recovers from illness, take him to the doctor for a health inventory to find out whether or not there are any later developments which require attention.

You are welcome to any one or all of these Metropolitan booklets: "Measles," "Scarlet Fever," "Whooping Cough," "Tonsils and Adenoids." Address Booklet Dept. 736-Z.

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Home Canning for Diabetic Diet

To the Editor:—I have at hand HYGEIA for November 1934, and I refer to the article "Dainties for the Diabetic" by Florence Harbough Diamond in that issue. Is it possible to can fruits at home successfully in waterpack with or without saccharin? Is there available material on the amount of saccharin, grain or bulk, to substitute for a given amount of sugar?

Mrs. A. K., Michigan.

Answer.—Not only is it possible to purchase in great variety standard quality fruit, canned water pack as well as juice pack, but it is possible, and even easy, to can fruit at home for the diabetic. If care is taken in the canning process, there is no need to fear spoilage. Any fruit may be canned this way, but the ones that have the greatest amount of natural sugar will sweeten more easily with saccharin. Pears, peaches, large blue Italian prune plums, the later apples and the berries, except gooseberries, do nobly with saccharin as a sweetening agent. In using the hot water bath, as well as any other method used in canning, the filled jars should remain in the water for thirty minutes after it starts boiling. The jars must not touch each other. They should be removed to a table to cool where a draft will not blow directly on them. The lids must not be screwed on tighter at this point, as it is in the cooling period that the jars seal themselves, and care must be taken to avoid breaking the seal already started.

The addition of saccharin to any fruit must be done carefully. Too much produces a bitter rather than a sweet flavor. Consequently, it is always wise to sweeten slowly and taste to make certain that the right amount is used. Saccharin comes in tablet and powder form, tablets being preferred for their convenience in handling. Once one becomes accustomed to using certain strength in tablet form, all guesswork is eliminated. The one-fourth grain tablet is equivalent to one teaspoonful of sugar, and the one-half grain equals two teaspoonfuls of sugar. The safest rule is always "Taste as you sweeten." In the use of saccharin, salt is a great help. It assists the saccharin in doing a better job.

Disease is from of old and nothing about it has changed. It is we who change, as we learn to recognize what was formerly imperceptible.—*Charcot.*

SCHOOL AND HEALTH

(Continued from page 657)

HEALTH WORKBOOK

By Kathleen Wilkinson Wootten, M.A. Price, $1.50. Pp. 220. Illustrated. New York: A. S. Barnes & Co., 1934.

MRS. WOOTTEN'S enthusiasm for health teaching and her success in writing other health workbooks leads one to expect that her latest book of this character for teachers, parents, nurses and social workers will be unusually helpful, and the reader will not be disappointed. The twenty-two chapters of the book present in outline form the major problems of health education in the school. There is a copious bibliography at the end of each chapter and a list of suggested activities. After each chapter outline there are blank pages for note taking. With such a book in hand the student will be well prepared to attack the problems of health education. The guidebook will tell him what to read and also for what to look. Although this book is intended primarily for students in teacher training institutions it should be of interest to teachers in service.

CHILDREN'S FEARS, DREAMS, WISHES, DAYDREAMS, LIKES, DISLIKES, PLEASANT AND UNPLEASANT MEMORIES

By Arthur T. Jersild, Frances V. Markey and Catherine L. Jersild. Pp. 172. New York: Bureau of Publications, Teachers College, Columbia University, 1933.

AN UNDERSTANDING of children is fundamental if the teacher is to guide their behavior with sympathy and skill. The gaining of this understanding is one of the most difficult tasks of science. It is easy to observe with accuracy what children do. What they think, fear and desire, and the nature of their fancy constitute a part of life, however, that is difficult to explore; yet this inner life of childhood is vitally important.

The authors of this unique investigation have attempted to explore this inner world by studying 400 children from the ages of 5 to 12 by the interview method. Apparently there were few of the children who realized that by a change in their habits or abilities they might make their dreams and wishes come true.

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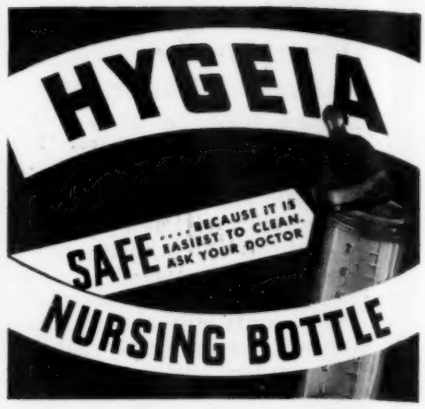
NEW YORK CITY TRIES OUT SUMMER DAY CAMPS

So that less fortunate children of New York City may have the advantages of the health-giving summer camp life, a number of the city's welfare agencies have combined forces to instigate a program of summer recreational day camps.

The purpose of this recreation program was in the beginning "the development of the whole child, his character and personality and his body," according to Maude L. Dryden, who writes of the enterprise in *Recreation.*

Interesting were the ways provided for going about this plan. Each of the daily trips to and from the camps was made as different and interesting as possible. The programs were varied and as contrasting to city life as was feasible. Fires were lighted without matches; magnifying glasses were used. Telling time by the sun was attempted, and weather signs were noted. The treasure hunts created much excitement and led to a new kind of interest in geography, history, nature lore and, to a slight extent, mathematics. These hunts included trail making with the use of old well known blazes, compass hikes, signaling and measuring distance by stride and shadows. The periods were highly successful and the increased alertness was very evident.

Miss Dryden expresses the philosophy of this growing summer institution in the following: "Camp is the laboratory of human relations. It is first, last and all the time, the place where happiness reigns, and happy, healthy people are pretty sure to be moral people. Loyalty and patriotism and a pride in their own country can more easily find foundation on which to build when nature expresses itself, and this can hardly find foothold among children reared in conditions where rebellion is the principal emotional expression and where frustration is the usual order. Camping serves a unique educational purpose by stimulating self-discovery and self-education. It is here that children are helped to learn rather than be taught. Camp also offers the best possible opportunity to acquaint children with the background of American history and literature. A child who never sees the woods or farm life cannot have a clear picture of the early American pioneer stage in the development of the nation. Camp can give experiences similar to those of the old settlers."



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TOMORROW'S DRIVERS

(Continued from page 598)

reason for having power what it is in modern cars is a matter that many of us have never considered. We all know what happens to us when we ourselves are going at high pressure all the time, either physically or mentally. A person can work 12, 14 or 16 hours a day, but we know that we get along best when we don't tax our last reserves of energy all the time. In the same way any one who has ever run machinery knows that if you keep it going at full capacity day in and day out, you're just multiplying the chances of a breakdown sooner or later. That's how it is with a car. By building in the ability to run at high speed, engineers make it practical to run at reasonable speed. If our car can go 70, 80 or even more miles an hour, it won't have to strain to go 35, 40 or faster if circumstances demand."

The three "E's" of accident prevention, as outlined by the National Safety Council, are: (1) engineering; seeing that the roads are safely constructed, center lines are distinct and that there are no obstructions at crossings; (2) education; teaching the public to use the highways properly, and (3) enforcement. The last should not be attempted without the accomplishment of the first two points. The enforcement phase of traffic safety is aimed only at those who continually or wilfully violate the courtesies of the road. And there are really comparatively few of these individuals. No city, county or state will ever prevent accidents on the highway simply by wielding the "big stick." It might be well if all admonitions on behalf of safe driving were as brief and to the point as this sign in a Pennsylvania village: "Slow. No hospital."

The average American family must bring itself face to face with the advantages and disadvantages of this dazzling instrument of speed that modern engineering genius has placed within reach. When it comes time for the young Henrys of the country to drive, need parents fill their minds with fear and foreboding? Need they wish to put off the "evil day" and hope that "Henry will listen to reason?" No. A frank discussion on the various angles of the new adventure and a complete lack of parental fear will do the trick. The young driver is put on his own. He feels he is trusted. The car is as much his responsibility as his parents'.

Along this line, Col. Robert C. Eddy of the Massachusetts Institute of Technology made the statement recently that 90 per cent of all highway accidents are due to the "frame of mind" of the car operators. This new approach to the safety problem, as described by Colonel Eddy in an international publication, explodes one of the common fallacies that speed causes most of the accident tolls. Translated by safety engineers into mental terms, the refusal to slow down is usually the result of impatience, worry, indifference or other mesmeric influences of the road. Haste is a mental disturbance that causes drivers to speed in the wrong places and at the wrong times. Hence this new technic on highway safety, founded on the conviction that it is possible to drive anywhere, any time and at any speed provided the driver keeps his wits about him. Many safety officials are no longer convinced that it is human nature for motorists to run down and maim their fellowmen on the highways.

At this point it would be well to consider the many benefits to be derived from a uniform system of traffic laws in the United States. In periodicals and newspapers and over the radio the results of numerous investigations are being aired. Why, for example, should the unobtrusive law observer from Massachusetts be harangued by traffic police in Iowa, and the traveler from Illinois be plunged unwittingly into trouble in California? Traffic enforcement would rid itself of many a snarl if uniformity were established once and for all.

Young Henry will some day think it natural, practical and even something to be proud of, to aim at a nonaccident record. Perhaps it will take time and plenty of grappling with the desire to "step on it" before he will be quite certain that "to be a good driver, in the terms of applied ethics, is to be a person of good manners, truly an altruist, ready to see and appreciate the problems of others, to make proper allowances for them and to exercise even a little more patience, care and consideration than is actually called for by the letter of the law." This *is* possible.

[NOTE.—This is the first of a series of articles on safety. In the August HYGEIA, Eleanor Everet's topic will be "Safety in Industry."]

Stop, look, and listen,
Before you cross the street,
Use your eyes, use your ears,
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—Modern Health Crusader of Vermont.

Diaper rash is so easy to prevent. Just use Merck Zinc Stearate!

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WHAT ABOUT HEALTH IN OUR RURAL DISTRICTS?

The rural community has always been considered the most healthful place in which to live. No doubt this would be true if both city and country were to adopt the mode of living that exists in most rural communities. All available evidence, however, indicates that as conditions actually exist today, by taking better care of its people the city has become a more healthful place than the country. Rural and urban districts, because of the traditional belief that the country is the more healthful place in which to live, have been slow to adopt and accept public health programs. Cases are numerous in which parents have strenuously objected to physical examination of children in school, the *Journal of Health and Physical Education* points out. Such statements as "That is none of the teacher's business" were common a few years ago.

It is apparent that people can live under extremely insanitary conditions without becoming conscious of the fact; or, if they are aware of these conditions they may be little concerned about them. The greatest single factor for the elimination of insanitary conditions is health education.

Any health program, no matter how extensive, must first be accepted by the public. Definite standards must be set up, and then ways and means of attaining these standards must be devised. The community must be educated to the need of health laws and means for enforcing them, more sanitary buildings and equipment, better provisions for the noonday lunch, better playgrounds, and more universal and appealing physical education. It is on these factors that good health is largely dependent.

Every rural school should be provided with the services of a school nurse who will visit the school regularly for the purpose of giving a thorough physical examination to all school children. Much credit is due the school nurse in teaching the need of screening, the importance of a pure water supply and other lessons of cleanliness. She has helped to teach children the value of regular hours of sleep, fresh air, bathing and proper food habits.

"Teach your boys and girls that they are *the* life and that the responsibility for health goes far beyond just the idea of being well; that it is the strengthening of millions of years of the human race and making it stronger for all time to come."

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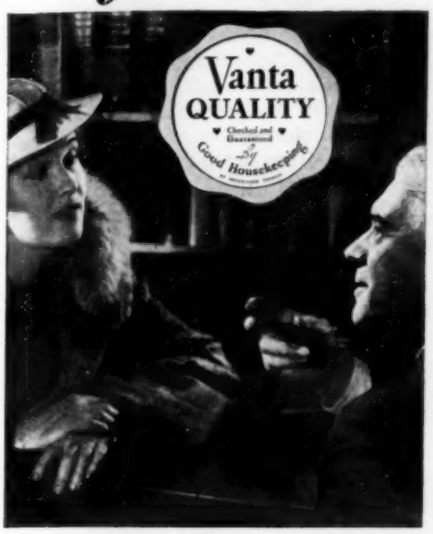

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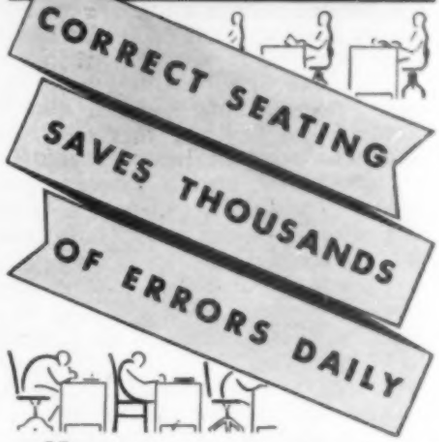
THE GASES OF THE AIR IN MEDICINE

(Continued from page 624)

deductions of profound significance. These gases are inert; that is, they do not under ordinary circumstances make combinations with other elements, such as oxygen or carbon or hydrogen. For that reason they were not thought to have significance as far as animal existence was concerned.

The further developments of Ramsay's work were of the greatest significance. With Dr. Frederick Shoddy, who had come to work in his laboratory in 1903, he showed that the emanation from the radium salts discovered by Madame Curie contained helium. Ramsay speaks of this production of helium from radium emanation as the first observed case of "transmutation," for radium and its emanation as well as helium must be considered among the substances known as "elements." Ramsay concluded in a memoir on the subject that four atoms of helium separate from one atom of radium ("almost certain from the work of Dewar and from experiments by Rutherford and by Ramsay and Shoddy"). Ramsay then applied radium emanation to the common elements in the attempt to transform them, and according to his belief he did accomplish this. In a letter to his friend Worthington, Nov. 21, 1906, he said, "I have the first proof that lead nitrate plus emanation give CO2. I am, of course, repeating. . . ." In a letter to Dr. Travers, May 20, 1907, Ramsay said, "I have got lithium from copper for the third time. . . ." In an address to the Chemical Society in 1909, Ramsay expresses the importance of the problems connected with the possibility of the transmutation of elements into one another. Despite its technical character, one feels inclined to quote one paragraph as indicating the march which scientific thought and concept have made since the times of Boyle, Mayow and Lavoisier: "The effect of chemical change is usually manifested in a gain or loss of energy. There is reason to believe that change from one elemental form of matter into another would be accompanied by an unusually large gain or loss of energy, for it is known that the 'degradation' of radium is coincident with the loss of a relatively enormous amount of energy. This energy, moreover, is in a highly concentrated form; much energy is contained in a small volume or, what amounts to the same thing,

POSTURE AND BUSINESS



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in small mass, using the word in the sense of quantity of matter."

Three years ago at the Presbyterian Hospital, New York, it was shown that animals could live in chambers in which the rare gases of the atmosphere were removed, thus proving their biologic inertness. One and a half years ago, a mixture of helium and oxygen was made, keeping oxygen at the same concentration as was present in air and substituting helium for nitrogen. Because of the exceptional lightness of helium, this mixture was one third as heavy as either air or oxygen, and it was thought that in conditions where marked difficulty in breathing was present this lighter gas mixture which still contained as much oxygen as air could be moved in and out of the lungs with less effort. This proved to be the case. In conditions such as severe, continuous asthma and in obstructive lesions in the larynx, trachea and bronchi, that is, in the airway that leads from the nose to the lungs, this relatively lighter-than-air gas mixture was capable of relieving patients gasping with shortness of breath who were not relieved even by 100 per cent oxygen. In other words, a new approach to the general subject of the use of the atmosphere in the treatment of human illness has just been developed, one which employs the physical property of one of the rare gases rather than, as has been reviewed, the chemical properties of two common constituents, oxygen and carbon dioxide. Just what its ultimate significance will be is too early to tell. The mystery of the air is far from being unraveled, and the scientist of the future will no doubt tell of discoveries now undreamed.

Of course what we have a right to expect from the American boy is that he shall turn out to be a good American man. Now, the chances are strong that he won't be much of a man unless he is a good deal of a boy. He must not be a coward or a weakling, a bully, a shirk or a prig. He must work hard and play hard. He must be clean-minded and clean-lived and able to hold his own under all circumstances and against all comers. It is only to these conditions that he will grow into the kind of a man of whom America can really be proud. In life, as in a football game, the principle to follow is: "Hit the line hard; don't foul and don't shirk, but hit the line hard."

—*Theodore Roosevelt.*

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535 North Dearborn Street CHICAGO

Physiologic Birth Control

THE RHYTHM

Of Sterility and Fertility in Women

A Discussion of the Physiological, Practical and Ethical Aspects of the Discoveries of Drs. K. Ogino (Japan) and H. Knaus (Austria) Regarding the Periods When Conception is Impossible and When Possible.

By Leo J. Latz, M.D., LL.D.

100th Thousand

$1.00 per copy

at bookstores or from

LATZ FOUNDATION

1235 Republic Building CHICAGO, ILL.

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FREE PAMPHLET

CAUTION AFTER FLOOD RESULTS IN LITTLE CONTAMINATION

The heavy floods that occurred last spring in New England proved to be a severe tax on the resources of those states when it came to protecting the people from the subsequent disasters that accompany these extreme conditions.

Health, a publication of the New Hampshire State Board of Health, gives an account of the treatments prescribed by the state for conditions of the emergency. Mimeographed instructions were issued for disinfecting the water, milk and food supplies and for the use of antityphoid treatment. Distribution of the 3,500 copies prepared was as wide as possible; the information was also broadcast by local New Hampshire stations.

As a result of the extreme cautions taken, little water contamination was found. Backyard wells seemed to be the worst offenders. These were often open-top and flush with the ground, contrary to the principles urged by the state department of health. Instructions were issued for treatment of these flooded private wells with chlorinated lime. For water-logged furniture, soap and water, sunlight and much air, rather than a strong disinfectant, were prescribed.

In regard to food, sealed cans and tightly sealed jars were considered safe; but of course anything open or closed with a loosely screwed-on cap should be thrown away. According to the bulletin, "As a precaution it is recommended that the jars, after cleansing, be either immersed upside down for a few minutes in the diluted Javelle water, with subsequent rinsing; or similarly treated by standing in warm water which is afterwards brought to the boiling point."

The curse of our times is public indifference. The typical American attitude toward social and economic problems is that of a playful, not overbright child. Everything from a kidnaping to a breadline sooner or later becomes a revue joke and a popular song. The individual who takes contemporary problems seriously is looked upon as "queer." So, too, the young boy or girl who elects to spend the precious "carefree" days of youth in working for a better social order seems, to a great many of his contemporaries a little "teched in the head," and possibly an unwitting tool of some pernicious alien influence that has taken advantage of his innocence.

—*Child Study.*

HOW CAN PHYSICAL EDUCATION CONTRIBUTE TO USEFUL LEISURE?

To think of physical education in terms of health alone would mean to center attention on a corrective, rehabilitory, therapeutic, hospitalized procedure of a bygone age, rather than on the development and preventive aspect of modern physical education, declares the *Journal of Health and Physical Education.*

Physical education is concerned not only with the building of organic vigor and power but with the development of health, character and an appreciation of the value of leisure.

In the field of competitive athletics we still too often mistake bigness for organic power; the husky looking freshman may in reality be a far greater risk in competitive sport than the smaller and leaner type. Biology teaches that frequently in rapid growth the vital organs have not kept pace and are therefore less conditioned to stand the strain which some games and sports demand. The fact that such physically precocious individuals do not experience a breakdown while in school or within a few years after leaving school is no proof they have not been harmed. Too often organic weaknesses, traceable to early extravagances, manifest themselves later in life.

No other field in which youth lives contains so rich a variety of activity as does physical education. The human body is the greatest medium for outward expression and commands the greatest variety of vehicles through which to do it.

In this button-pressing age, with only a remnant of the joy of achievement left in industry, the new freedom that comes with increased leisure must make up for this loss in the various cultural fields of hobbies. To stimulate ambition toward these experiences is worthy of a place in education. It means growth not merely in knowing but in doing; not merely in health but in total personality.

Leisure has become the right of the masses—"that time when we do as we please." In olden days the youth of the aristocracy was always trained in cultural things and could use leisure constructively. Education today is confronted with the task of equipping youth with skills and urges for constructive use of leisure time. America has the shortest school day, the shortest school week and the shortest school year of all civilized countries in the world.

Present conditions demand an education that will make the individual safe to himself and to society; that will make him sure of earning a living as well as living a life.

HOT WEATHER HEALTH

The means to summertime health and the means to cold weather well being do not always duplicate each other. For this reason, Dr. Robert Olesen, medical director of the U. S. Public Health Service, outlines a few general rules for hot weather conduct in an article in *The Scientific Monthly.*

Whether or not the individual contemplates a change in scenery, summertime is not the season for excessive personal activity or exercise. "The onset of the hot season is a signal for greatly reduced mental and physical activity—a time for recharging the human 'battery,'" says Dr. Olesen. Exercise should be suited to the occasion as well as to the requirements of the individual. Furthermore, participation in sports should be confined to early morning and late afternoon, when the heat of the sun is less intense.

An abundance of water taken externally and internally is necessary during this time. One or more tepid tub baths or cool showers will quickly displace any discomfort or fatigue; but "just how much water should be consumed in hot weather depends largely upon the work performed, the atmospheric temperature and the relative humidity." The rapid or excessive use of iced or sweetened drinks should be avoided since they are apt to affect digestion.

Indulgence in a hobby is an excellent way of mitigating the discomforts of heat. The mental relaxation that this affords is an essential factor and one that should by all means be encouraged. Moreover, the reading of light, diverting and not too stimulating literature is often soothing and conducive to a feeling of well being. Comfort during hot weather is due in no small part to a complacent mental attitude. A philosophic state of mind, freedom from worry and inclination to benefit as much as possible by the respite from ordinary duties are all conducive to health and happiness.

One inch of joy surmounts of grief a span,
Because to laugh is proper to the man.

—*Rabelais.*

Schools and Camps

Radford School For girls. Accredited college preparation in ideal year-'roundclimate. Open air classes in patio. Special work in music, art, dramatics, secretaryship. Character and personality developed. Sports, riding. Limited enrolment. Not for profit. Catalog. **Lucinda de L. Templin, Ph.D., Principal, 4700 Austin Terrace, El Paso, Texas.**

Schools and Camps for Exceptional Children

Beverly Farm, Inc. Home and school for nervous and backward children and adults. Successful social and educational adjustments. Occupational therapy. Dept. for birth injury cases. Healthfully situated on 220-acre tract, 1 hr. from St. Louis. 7 well-equipped buildings, gymnasium. 38th year. Catalog. Groves Blake Smith, M.D., Supt., Box H, Godfrey, Ill.

DEVEREUX SCHOOLS
Devereux Tutoring Schools, separate buildings, boys, girls. Individual programs; social training stressed. Camp at North Anson, Maine. Devereux Farms, Glen Moore, Pa., with industrial shops for young men over 16. **Helena Devereux Fentress, Director, or John M. Barclay, Registrar, Box 90, Berwyn, Pa.**

<> TROWBRIDGE TRAINING SCHOOL <>
Home school for nervous, backward children. *Best in the West.* Beautiful buildings. Spacious grounds. Experienced teachers. Individual supervision. Resident physician. Enrolment limited. Endorsed by physicians, educators. Booklet. E. Haydn Trowbridge, M.D., 1810 Bryant Bldg., Kansas City, Mo.

STUTTERING CORRECTED
Stuttering and stammering, delayed speech, indistinct speech and baby talk, post-operative cleft palate speech, disorders of speech due to partial deafness, corrected. An ethical school.
WILSON SCHOOLS, Arnold Place, Dayton, Ohio

THE SYLVESTER SCHOOLS
For boys and girls whose progress has been hindered or retarded by illness, nervousness, speech defects or inability to adapt themselves to the usual form of instruction. Birchmont, new hall for girls. Illustrated catalog. 3419 Grand Avenue, Des Moines, Iowa.

Of the most absorbing importance to expectant mothers

"A Child is to be Born"

A reprint of the delightful and practical articles in HYGEIA

Diet · Clothing · Exercise
Symptoms · Bathing · Teeth
Sanitation · Layette

10c AN ENCOURAGING AND SYMPATHETIC BOOKLET 10c

American Medical Association
535 N. Dearborn St. Chicago, Illinois

ACCEPTED FOODS

This department is a useful guide in the selection of foods of quality, advertised with truthful claims. All products in this section as well as any others advertised elsewhere in HYGEIA stand accepted by the Committee on Foods of the American Medical Association, and are entitled to bear its "Seal of Acceptance." The foods listed here are but a portion of those accepted by the Committee. If you desire information regarding any other food product, you are invited to write to HYGEIA.

OLD ANTIQUE
Pale Dry
Ginger Ale ◆ ◆ ◆

Clear and bubbling, zestful and refreshing. Old Antique is a ginger ale that will please you. When you order ginger ale, ask for Old Antique. Keep several bottles of it in your refrigerator — to be ready when you want it. For you'll want more, once you taste Old Antique.

Bottled by
The Better Bottler in Your City

Vitamin Certified, Non-Separating, Undiluted Pure Tomato Juice
•
THE SUN-RAYED COMPANY
FRANKFORT, INDIANA

Golden State
EVAPORATED MILK
California's own brand
Golden State Company, Ltd.
SAN FRANCISCO — LOS ANGELES

WHITE BREAD

An interesting set of questions and answers in booklet form. A copy may be obtained free by request to the

AMERICAN INSTITUTE OF BAKING
1135 Fullerton Avenue . . . . Chicago

● There's never any coaxing or forcing with these strained foods. Baby takes them eagerly because they taste so good. Each of the nine tempting varieties is a choice food, properly prepared—rich in natural flavor. See page 670.

STOKELY'S
THE STRAINED FOODS BABY REALLY LIKES

Dated for Freshness

Mention HYGEIA when writing to Advertisers

Do You Know—

1. Why a child misbehaves? *See page 613.*
2. Whether cancer is infectious, contagious or inheritable? *See page 600.*
3. What the oxygen content of ordinary air is? *See page 620.*
4. What causes goiter? *See page 638.*
5. Where leprosy came from? *See page 636.*
6. That the lockjaw germ usually becomes dangerous only in the presence of other infectious germs? *See page 589.*
7. That a rectal temperature will be at least one degree above a mouth reading on the same patient, taken at the same time? *See page 605.*
8. That school boy safety patrols are operating in more than a thousand municipalities? *See page 594.*
9. What the largest organ of the body is? *See page 602.*
10. What is one of the latest developments in quackery? *See page 584.*
11. Where Jenner, the originator of modern smallpox prevention, lived? *See page 630.*
12. What single experiment made Ivan Pavlov famous? *See page 642.*
13. Who was the only physician to sign the Declaration of Independence? *See page 628.*
14. What kind of an appearance results when you walk with turned-out toes? *See page 625.*
15. What instrument makes a written record of the efficiency of the heart? *See page 616.*

Dr. Phillips
CITRUS FRUIT JUICES
Recommended for Children
as a Source of Vitamins A, B and C

Dr. Phillips Orange and Grapefruit Juices and Grapefruit Hearts are uniformly rich in vitamin C and always full of flavor. Tree-ripened, they are canned fresh from the grove under the most modern scientific and sanitary conditions. Easy to serve at any time, anywhere. Get several cans today.

DR. P. PHILLIPS CO., Orlando, Florida

Saves Work for Mothers

Why go to the trouble of cooking and straining vegetables for baby when, for only a few cents a day, you can feed Gerber's Strained Vegetables? 9 foods to choose from. See page 669.

GERBER PRODUCTS CO.
Fremont, Mich.

DURKEE'S PURELY AMERICAN VEGETABLE MARGARINE

Made entirely from American produced ingredients. Delicious. Wholesome. For cooking, frying, baking and table use.

Ask Your Grocer for Durkee's Margarine.

Durkee Famous Foods, Inc.
Chicago, Ill. Norwalk, Ohio

ASSURED HIGH QUALITY

C-H-B CALIFORNIA HOME BRAND

Tomato Juice
Tomato Catsup
Chili Sauce

SIMPLIFY SUMMER BREAKFASTS

with delicious KARO served on Wheat cakes, Waffles, sliced bread, cereals, etc., RICH in food-energy value. See page 670.

Drink Krim-Ko* for Calcium

A delicious beverage, rich in bone and tooth building calcium. Children drink Krim-Ko without coaxing. See page 671 for additional information on Krim-Ko.

* chocolate flavored, sweetened, partially defatted milk (added tapioca—salt).

KRIM-KO CO., 4830 S. Turner Ave., Chicago

Mention HYGEIA when writing to Advertisers

THE MARTIN FAMILY VACATION

(Continued from page 641)

MARY: Oh, boy, that's a good one on Eagle Scout George.

MRS. MARTIN: You'd better watch your step, or he'll have one on you.

MARY: Oh, yeah? I guess I can look out for myself.

MRS. MARTIN: Look at George and Dad getting into the car. I'll bet they're going scouting for water.

MARY: Say, this is rich. Just wait, Brother George. Just wait till kitty gets her claws in you.

MRS. MARTIN: Let's go over and look at that well while they're gone.

MARY: Are you going to give them the big laugh, too?

MRS. MARTIN: You never can tell what your mother is going to do, young woman.

MARY: I'll say not. That's what makes you interesting. You don't seem to get old.

MRS. MARTIN: Listen, young lady, how much have you got left of your day's allowance?

MARY: What makes you ask, Mother?

MRS. MARTIN: Because, when you hand your parents a line of taffy like that, we have learned to suspect something.

MARY: Why, Mother!

MRS. MARTIN: Answer me. How much have you got left?

MARY: Well, not—not very much.

MRS. MARTIN: That isn't what I asked you. I said "How much?"

MARY *(in a small voice):* None at all.

MRS. MARTIN: I thought so. But here we are at the well.

MARY: And believe me, I'm not going to miss a thing. Me and Big Brother is sure goin' to have some fun over this.

MRS. MARTIN: You mean you are. But watch out. That boy isn't slow on the come-back.

MARY: Trust me!

MRS. MARTIN: So this is the well.

MARY: Well, well!

MRS. MARTIN: Oh, Mary, must you?

MARY: Must I what, Mother?

MRS. MARTIN: Make such remarks as that!

MARY: Anyway, it looks like a nice well. Here, let me pump some water out. *(The pump handle squeaks.)* Mercy, what a noise!

MRS. MARTIN: And look at the color of the water. Just as clear and nice as any one could want. I wonder why they turned it down.

MARY: I think I see. Look at this platform.

MRS. MARTIN: You mean the planks around the top of the well?

MARY: Yes. They're all rotten. *(The handle squeaks again.)* And see where the water goes when I pump?

MRS. MARTIN: It seems to leak right back into the well.

MARY: And we've been walking on here with our dirty shoes. I guess maybe they were right in turning away from here.

MRS. MARTIN: Oh, look, Mary. There's a tag on the well.

MARY: Aha! That's the answer. "Unsafe water. Do not drink." And look over there on that tree.

MRS. MARTIN: On what tree?

MARY: The big oak over there There's a sign on it. Let's go and read it.

MRS. MARTIN: Oh, my goodness. What terrible poetry! Listen:

"Think before you drink,
If danger is apparent,
Continue to think,
Don't drink."

MARY: Gee, I could write better verse than that.

MRS. MARTIN: The poetry may not be so good, but there's a lot of sense to it.

MARY: There comes the car. Let's get back to camp. I haven't seen my brother George for almost ten minutes.

MRS. MARTIN: And when you do see him, there'll be a fine lot of trouble, or I miss my guess. *(A motor is heard, faint at first, then louder, then it stops.)*

MARY: Hello, George, where you been?

GEORGE: Who wants to know?

MARY: Did you pick this camp site?

GEORGE: What's wrong with the place?

MARY: Didn't I hear you say that a camp site should have good water?

GEORGE: Just take a look in the car. Four big buckets of water. What more do you want?

(Continued on next page)

YOU *and* YOUR BABY SHOULD SEE US HURRY!

You rush sometimes to get Baby's dinner. We hurry to get thousands of babies' dinners. *Our* haste is to protect quality, that deteriorates after vegetables are picked. *Home Grown* vegetables only are good enough for Gerber's. The selected, controlled farms are within an hour's trucking from our kitchens.

Gerber's offer more vitamins and minerals, greater digestibility, than most home-prepared vegetables. Cooking is in closed systems under controlled temperatures for greater protection of vitamins. Excess moisture is removed by evaporation to conserve minerals. Because they *are* packed *so fresh*, these foods can be left unseasoned by us, so any salting or sweetening may accord with your doctor's instructions.

And Gerber's exclusive Shaker-Cooking means quick, even cooking. See if you don't think these foods look and taste *fresher!*

Note: Gerber's Cereal is of selected grains, wheat embryo added, cooked in whole milk and strained. Gerber's Prunes are from famous Santa Clara Valley.

Gerber's

Nine Varieties of Shaker-Cooked Strained Foods

YOU ARE INVITED *to visit us and inspect our plant when vacationing or travelling in Michigan.*

8 inch doll

Send for This Attractive Gerber Doll

for your baby. Made of soft sateen, stuffed and trimmed complete. Only 10c and three Gerber labels. State blue for boy or pink for girl.

GERBER PRODUCTS COMPANY
FREMONT, MICHIGAN
(In Canada: *Grown and Packed by* Fine Foods of Canada, Ltd., Tecumseh, Ontario.) 127

NAME.....

ADDRESS.....

CITY.....STATE.....

AGE OF BABY.....BOY.....GIRL.....

"Mealtime Psychology," a booklet on infant feeding, sent free on request. "Baby Book," on general infant care, 10c additional.

RICH IN FOOD-ENERGY VALUE

(Karo Syrup consists of dextrins, maltose and dextrose with a small percentage of sucrose)

DELICIOUS served on *Wheat cakes, Waffles, Sliced Bread, Cereals, etc.*

MRS. MARTIN: What was wrong with that well, John?

MR. MARTIN: You just came from there, didn't you?

GEORGE: Mary was there too. I'm sure she must have seen what was wrong.

MARY: I saw a tag on the well.

GEORGE: A tag?

MARY: Yes, t-a-g. Not the game that children play. A label.

GEORGE: Yes, I understand English.

MR. MARTIN: I didn't see any tag, did you, George?

GEORGE: No.

MRS. MARTIN: And there was a sign on a tree near there, too, with the funniest verse.

MR. MARTIN: I guess we missed something, Son.

GEORGE: Well, maybe. What was on the tag?

MRS. MARTIN: It said the water wasn't safe.

MR. MARTIN: And the sign?

MARY *(mockingly)*:

"Think before you drink,
If danger is apparent,
Continue to think,
Don't drink!"

GEORGE: Now, ain't that somethin'?

MARY: Poetry, you mean? I'll say so.

GEORGE: That's what I meant.

MRS. MARTIN: Good sense, though.

MARY: And George didn't see it! Oh, dear, dear.

GEORGE: What do you mean by that?

MARY: Oh, nothing much. Only I thought Boy Scouts were always observant.

GEORGE: Oh, did you? Well, they are. And they don't need signs and tags to tell 'em when a well is no good.

MARY: I'm so glad you're not going to disappoint me.

GEORGE: Aw, go climb a tree!

MRS. MARTIN: Well, anyway, George, if you didn't see those signs, why didn't you use the well water?

GEORGE: In the first place, the cover was made of boards, and they were dirty and rotten, and water could leak through them right back into the well. In the second place, the waste water wasn't drained away from the well. And the pump had to be primed—

Every mother knows the protection a good fever thermometer can give her baby's health. No mother wants to be without one. Yet they're expensive and often broken. Here's your chance to get a regular $1.25 certified thermometer made by Faichney, Watertown, N.Y., on a special limited offer. Simply send 12 *labels from STOKELY'S STRAINED FOODS and 25c to Stokely Brothers & Company, 2351 South East Street, Indianapolis, Indiana.* Your thermometer will be sent to you immediately—postage prepaid.

REMEMBER MOTHER! There's no fussing or fretting when Stokely's are on baby's menu. Baby takes *these* strained foods eagerly; they taste so good. Nine tempting varieties—each prepared to retain natural flavor and food value. Smoothly strained to be readily digestible. Packed in golden enamel lined cans, ready to heat and serve. ASK YOUR DOCTOR.

Hurff's Tomato Juice has been accepted by the Committee on Foods of the American Medical Association. Hurff's Tomato Juice is made from carefully selected vine ripened New Jersey tomatoes, and is a dependable source of vitamins A, B and C.

EDGAR F. HURFF CO.
Swedesboro, N. J.

What's in a Can of Canned Food?

Modern knowledge is shattering many false ideas about canned foods. Be sure to read the highly informative series of ads in HYGEIA on values of canned foods. See page 581.

AMERICAN CAN COMPANY, New York City

Try Heinz Double-Sure Strained Foods for Baby

You know Heinz quality in foods. You can have this same high standard in strained foods for baby. Insist on Heinz. Send for valuable baby diet book featured on page 672.

H. J. HEINZ CO., Pittsburgh, Pa.

WHEATIES

● Make youngsters eat big breakfasts—start them off with a heaping bowl of Wheaties, the new whole wheat cereal. Nutritious and delicious. At your grocer. See 3rd Cover.

DO YOU LIKE GOOD CREAM CHEESE?
HAVE YOUR DEALER SHOW YOU THE NAME
Breakstone's
WHEN HE CUTS YOUR ORDER

MRS. MARTIN: Not when Mary tried it.

MR. MARTIN: Possibly that was because George and I had just primed it.

GEORGE: And—there was a barnyard *up* the hill from the pump. Did you see that, Mary dollink?

MARY: Eh—why, of course.

GEORGE: Yes, you did—not!

MRS. MARTIN: As long as we have water, let's get busy and eat. I'm starved! Did you find the right kind of well, George?

GEORGE: I'll say we did. Concrete top, drain for waste water, pump that works the first time, and the owner has a certificate from the state board of health showing the water's safe.

MARY: Boy, you're good, ain't you?

GEORGE: You tell 'em, kid!

CLOSING ANNOUNCEMENT: STATION ANNOUNCER:

And so the family has an ample supply of good water for use about camp. They're having a good time on their vacation, but they aren't taking any foolish chances. Tune in again . . . at . . . and hear more about their vacation jaunt.

MUSIC

CHIMES

[* Sound Effects: The sound of an automobile engine may be simulated by a very quiet electric fan that is placed close to the microphone and a little to one side. A noisy fan will sound like an airplane, not an automobile engine. Sometimes removing two of the blades, directly opposite one another, will improve the sound. If there is recording in the studio forget about the fan. A real horn sounds just like a real horn through the loud speaker.

A squeaking pump handle can be simulated most excruciatingly with a flat sheet of metal over which the end of a file is scratched back and forth rhythmically. This must be kept far enough away from the microphone. A handle that does not squeak but merely makes a regular clink-clank can be imitated with a small postal scale of the counterweight type close to the microphone. Regularly pressing down and then releasing the platform of the scale gives the desired sound. A spring scale, of course, is useless.

Water from a pump can be simulated by means of a basin of water and a glass. Filling the glass and pouring the water back produces the sound. It should be fairly close to the microphone. Of course it must be timed with the sound of the pump handle. It takes one person for each effect, and they should be well rehearsed before going on the air.]

(To be continued)

The man who has not anything to boast of but his illustrious ancestors is like a potato—the only good belonging to him is underground.

—*Sir Thomas Overbury.*

How To Make Milk Rebels CHEER!

● Just serve them Krim-Ko *with* meals and *between* meals. Its true, delicious chocolate flavor is loved by all. Krim-Ko is made and pasteurized by selected local dairies. It contains all the Calcium, Phosphorus, Vitamin "G" found below the cream line of milk—is equal to fresh milk in food energy value.

Krim-Ko is readily digested. Can be taken in mid-morning or mid-afternoon without interfering with the appetite for regular meals. Give it to the children when they ask for candy. It's tempting as a chocolate soda . . . and it oftentimes puts a stop to "milk fussing."

FREE Diet Information

If you have cases of "milk fussing" or milk refusing, on which you would like to test Krim-Ko, we shall be glad to furnish you with complete information about Krim-Ko and its place in the diet. Write today to the Krim-Ko Company, 4830 S. Turner Ave., Chicago, Ill.

Krim-Ko is chocolate flavored, pasteurized, partially de-fatted milk (added tapioca salt).

KRIM-KO
REG. U.S. PAT. OFF
CHOCOLATE FLAVORED DRINK

PLEASE SEE PAGE 577

Facts about COSMETICS

Do you know that there is no such thing as a "skin food"? That cosmetics can lay no claim to vitamin or hormone content that will "rejuvenate" the skin? That no preparation will restore the natural color to gray hair?

"Cosmetics and Allied Preparations," a 60-page booklet prepared by the Bureau of Investigation of the American Medical Association, gives *facts* about various widely exploited preparations for the skin and hair, deodorants, depilatories, etc. Most of this material has appeared in THE JOURNAL A. M. A. Included are several HYGEIA articles by Dr. Arthur J. Cramp, director of the Bureau.

Especially worth while is the information concerning three groups of cosmetic preparations that may be objectionable from the point of health: certain freckle removers, many hair dyes, and various depilatories or superfluous hair removers. Inform yourself correctly regarding the safety of cosmetic preparations!

Price 15 cents. Order from

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago

LOUDON Brand
PURE
TOMATO JUICE
Delicious—Refreshing—Appetizing—Zestful
Brimming with Sunshine and Health
The Loudon Packing Company -- Terre Haute, Indiana

CLOVERDALE
Pure Mountain Water Sparkling
Wholesome and invigorating—comes from the lofty mountains of Pennsylvania. Used in making Cloverdale Sarsaparilla and Cloverdale Ginger Ale—both Pale Dry and Amber.
CLOVERDALE SPRING COMPANY
Plant: Newville, Pa. Office: Baltimore, Md.

EHMANN OLIVE OIL
is guaranteed to be a pure, virgin Olive Oil. It is pressed from carefully selected sound Ripe Olives under the most modern and sanitary conditions. Ehmann Olive Oil is recommended for both medicinal and table use because of its lack of after-taste and its perfect assimilation.
EHMANN
Olive Company
Oroville, California

CHURCH'S GRAPE JUICE
made from
PROPERLY RIPENED GRAPES
contains
NO ADDED SUGAR
and
NO EXCESS ACID
of unripened fruit
Church Grape Juice Co., Kennewick, Wash.

"THE CALL OF THE TRAIL"—

To one who has slept out in the open on balsam boughs on the Pacific coast and has spent a Christmas vacation in a mountain summer resort hotel snowed under to its gable peak; to one who has crossed every pass in Glacier National Park on foot with a pack on the back; who has followed some of the most interesting trails in the Rockies of Colorado; who has climbed Mt. Snowden; who has done many a happy mile of the Long Trail in the Green Mountains; to one raised in the Middle West far from the mountain trails, yet who felt life most incomplete without such experiences—to such a one it seems a calamity that college generation after generation can pass away without in some way being awakened to the joys and values of hiking and roughing it occasionally.

The Journal of Health and Physical Education presents a description of the widening influence of the American Youth Hostel activities. The primary objective is to furnish inexpensive lodgings for youth and persons of all ages so they may journey about this country with costs at a minimum and receive the great educational value of seeing new places, meeting people from different parts of the United States; enjoy the comradeship of newly found friends, and acquire a love of nature through close contact as they hike or "bike" from one hostel to another. High standards are adhered to in all the hostels. Among the rules are: no smoking or drinking in Youth Hostels; report in to the chaperon no later than 8 o'clock; quiet and lights out by 10 o'clock. The motto of the movement is, "Not for myself but for the group."

The hosteler, usually a man or his wife in a farmhouse, furnishes a sheet made up into a sleeping bag. The hostel, for the sum of twenty-five cents each night, provides a roof overhead, some sort of a bed, blankets, fuel, cooking utensils and a place to cook the food. This is the price in foreign countries, and a real attempt is being made to keep the price as well as the idea universal.

It is not sufficient merely to furnish hostels and hostel mothers and fathers with a few rules, taking it for granted that American youth knows how to dress properly, how to pack a knapsack, what kind of food to take along, how to make a bed properly or how to journey to conserve energy and preserve safety. An educational program is necessary.

DON'T SKIMP HERE!

SAVE yourself hours of kitchen time—but *don't skimp on baby's food!* Give him the best. He deserves it! Give him foods adequate in nutritional value. Give him foods that *taste* better. Give him Heinz Strained Foods—foods of the same high quality that you yourself prefer!

In actual tests, small babies have shown decided preference for Heinz Strained Foods. They like the "garden fresh" flavor. See if your baby doesn't prefer Heinz. The taste is appetizing—the color rich and natural.

Remember your baby needs the valuable vitamin and mineral substances these foods contain. Heinz Strained Foods cost no more than other brands—yet they bear *two* famous Seals of Quality: the Heinz 57 Seal and the Seal of Acceptance of the American Medical Association's Committee on Foods! You can *depend* on Heinz quality. Demand it.

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

57

HEINZ STRAINED FOODS

10 KINDS—1. Strained Vegetable Soup. 2. Peas. 3. Green Beans. 4. Spinach. 5. Carrots. 6. Beets. 7. Prunes. 8. Cereal. 9. Tomatoes. 10. Apricots and Apple Sauce.

THE "MOVIE" PROBLEM CAN BE SOLVED IN THE HOME

Why do children like movies of various kinds—and most often the very ones their parents and teachers would not choose for them? *Child Study* magazine discusses answers to the movie problem.

Sometimes the source of the child's emotional satisfaction in books or in motion pictures is clear and easy to recognize. But it may be subtle, as in the case of the 11 year old boy who, though he had always disliked physical fighting, was passionately thrilled by a grueling fight on the screen. A psychiatrist would probably suggest that the very implication of cowardice by which he must be vaguely troubled had redoubled his satisfaction, since he could interpret the victory of the picture's peace-loving hero as a vindication for himself as well.

Slapstick and rough comedy may not appeal to mature minds, but they frequently meet a child on his own level of humor. Even vulgarity may have value for him as a symbolic revolt against a too rarefied atmosphere. We must beware of overcivilizing the movies to meet adult standards when it is often an escape from these very standards which the child needs and is unconsciously seeking.

There is always the possibility that symbolic experiencing and escape from reality may too fully take the place of active living and striving. In avoiding this danger the emphasis must be on positive opportunity rather than on prohibition. A life full of interesting, creative things to do will keep the movies in their place. Where they become an all engrossing habit there is real cause for concern. Dull, unhappy children naturally gravitate to the movies as an escape.

Because young delinquents when interviewed revealed again and again ideas and suggestions gleaned from the films, movies have been assumed to be the *cause* of their unsocial behavior. Must we not look deeper for the causes that produce emotional readiness for delinquency, and determine which patterns should be chosen for imitation?

Positive artistic standards, rather than censorship, are needed to protect the community from the unwanted sort of influence. In the meantime the art of interpretation can do much to protect our children.